SONY

Mini Hi-Fi Component System

Operating Instructions ____ EN

Mode d'emploi ____ F

Manual de Instrucciones ____ E

使用説明書 ____ C

COMPACT disc DIGITAL AUDIO

MHC-E60X

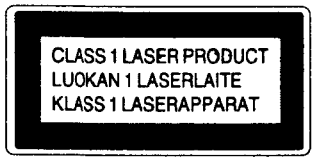
©1994 by Sony Corporation

WARNING

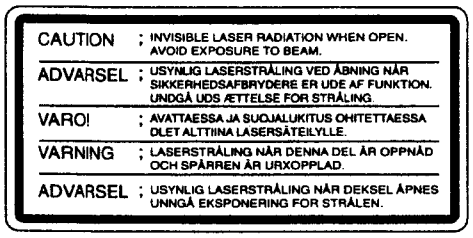
To prevent fire or shock hazard, do not expose the unit to rain or moisture.

To avoid electrical shock, do not open the cabinet. Refer servicing to qualified personnel only.

Laser component in this product is capable of emitting radiation exceeding the limit for Class 1.



This appliance is classified as a CLASS 1 LASER product. The CLASS 1 LASER PRODUCT MARKING is located on the rear exterior.


CAUTION ; INVISIBLE LASER RADIATION WHEN OPEN. AVOID EXPOSURE TO BEAM.
ADVARSEL ; USYNLIG LASERSTRÅLING VED ÅBNING NÅR SIKKERHEDSAFBRYDERE ER UDE AF FUNKTION. UNDGÅ UDS ÆTTELSE FOR STRÅLING.
VARO! ; AVATTAESSA JA SUOJALUKITUS OHITETTAESSA OLET ALTTIINA LASERSÄTEILYLLE.
VARNING ; LASERSTRÅLING NÄR DENNA DEL ÄR OPPNÅD OCH SPÄRREN ÄR URXOPPLAD.
ADVARSEL ; USYNLIG LASERSTRÅLING NÅR DEKSEL ÅPNES UNNGÅ EKSPONERING FOR STRÅLEN.

This caution label is located inside the unit.

Welcome!

Thank you for purchasing the Sony Mini Hi-Fi Component System. This series is packed with fun features. Here are just a few:

- A preset feature, that lets you store and recall up to 40 of your favourite radio stations
- DBS (Dynamic Bass System) that boosts low frequency range audio to provide deep, powerful bass through the three-way speakers
- A graphic equalizer that lets you adjust the audio quality to fit five music types
- A timer that lets you set the CD player, tape player or radio to turn on and off whenever you want
- A dual tape deck that lets you record from the radio, CD player or from the other tape deck and relay play from both decks
- A remote commander that lets you control your audio system from your seat

Table of Contents

Chapter 1: Setting Up

Connecting the Stereo 4
Inserting the Batteries 5
Setting the Clock 6
Simple Operation 6

Chapter 2: the CD Player

Playing a CD (normal play) 7
Playing Tracks in Random Order (shuffle play) 8
Playing Only the Desired Tracks (delete play) 8
Playing Tracks in the Desired Order (programme play) 9
Playing Tracks Repeatedly (repeat play) 9

Chapter 3: the Radio

Listening to the Radio 10
Presetting Radio Stations 10
Playing Preset Radio Stations 11

Chapter 4: the Tape Player

Playing a Tape 12
Recording a CD 13
Recording a CD: Selecting Tape Length Automatically (tape select edit) 14
Recording a CD: Specifying Tape Length (time edit/just edit) 15
Recording a CD: Specifying Track Order (programme edit) 16
Recording From the Radio 17
Recording From Another Tape (dubbing) 17

Chapter 5: Sound Adjustment

Adjusting the Sound 19
Selecting the Audio Emphasis 19
Adjusting the Audio Emphasis 20
Making a Personal Audio Emphasis File (personal file) 21

Chapter 6: Additional Features

Falling Asleep to Music 22
Waking Up to Music 22
Timer-Recording Radio Programmes 23
Microphone Mixing 24
Karaoke: Singing Along (karaoke pon) 24
Connecting Optional Equipment 24

For Your Information

Precautions 26
Troubleshooting Guide 26
Maintenance 27
Specifications 28
Glossary 28
Index to Parts and Controls 30

Index 31

Chapter 1: Setting Up

Connecting the Stereo

Inserting the Batteries

Setting the Clock

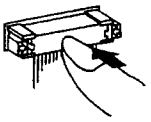
Simple Operation

Connecting the Stereo

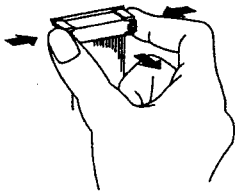
Use the illustrations below to connect your stereo.
If you want to connect any optional components to the stereo, see "Connecting Optional Equipment" in Chapter 6.

STEP 1 Connecting the Flat Cord

Connect the supplied flat cord to the SYSTEM CONTROL connectors with the same colour until it clicks.



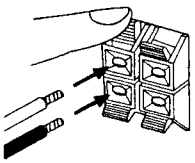
To disconnect the flat cord
Pull out the connector of the flat cord while pressing its sides. Do not pull the flat cord itself.



STEP 2 Connecting the Speakers

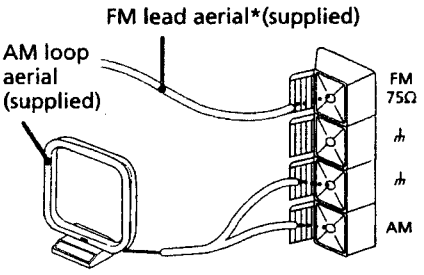
1 Twist the speaker cable coating and strip it from the end of the cable.

2 Connect the right speaker to R connectors and the left speaker to L connectors.



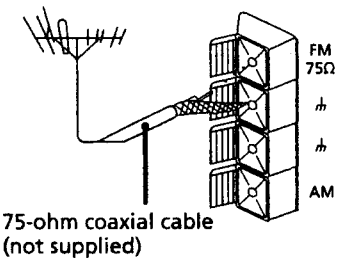
To set up the speakers away from the system
Use a speaker cord (not supplied) to extend the length of the connecting cords.

STEP 3 Connecting the Aerials



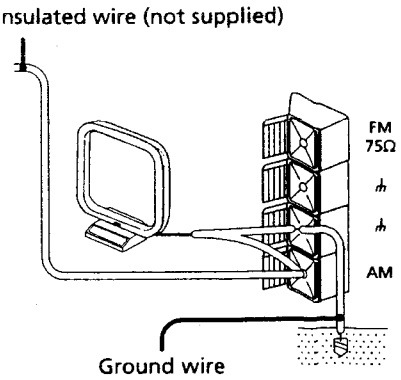
*Note: Extend it horizontally

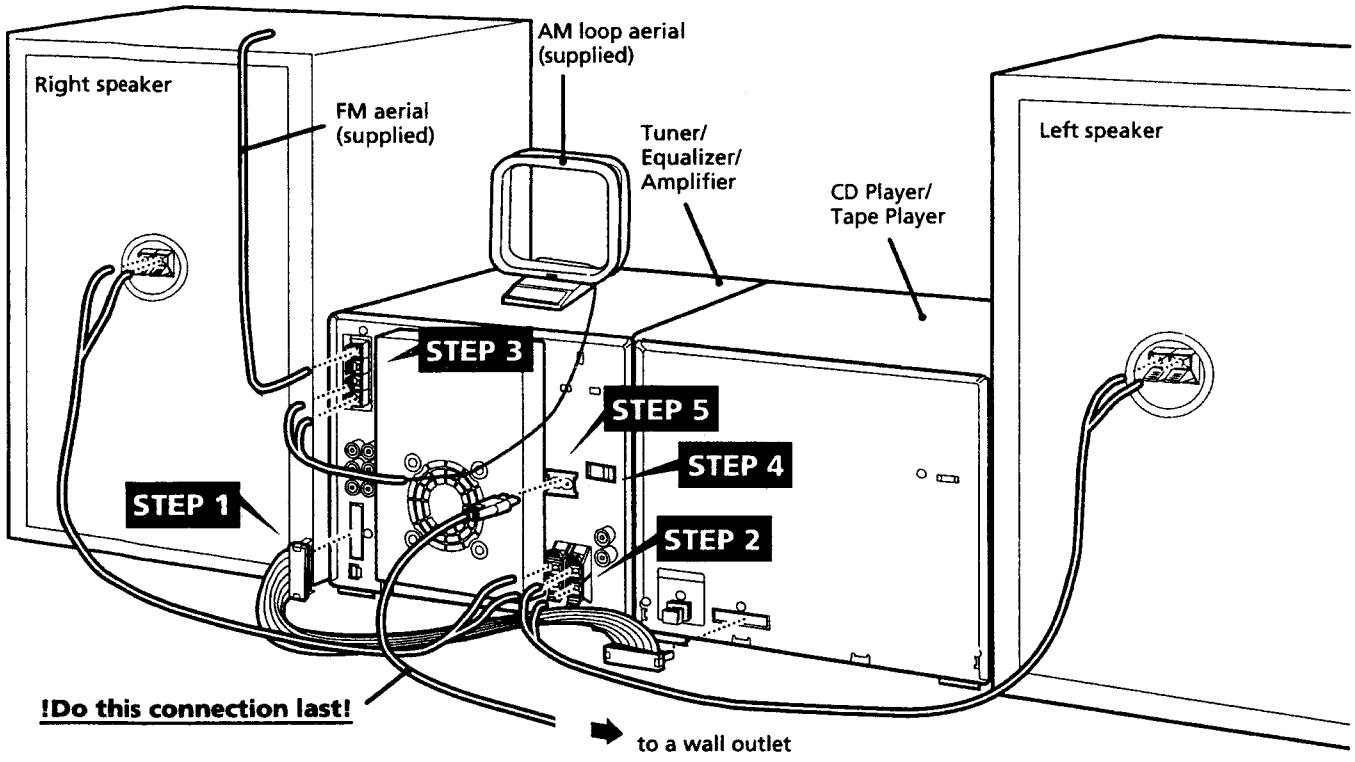
To improve the FM reception
Connect an outdoor FM aerial to the FM 75 Ω terminal, using a 75-ohm coaxial cable.



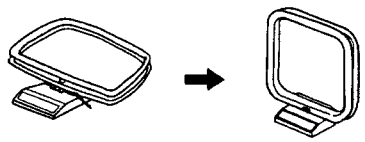
To improve the MW/SW reception
After you connect the AM aerial, connect a 6- to 15-meter (20- to 50-feet) insulated wire to the AM terminal. Connect the ⏚ terminal to earth.

Important
Ground the external aerial against lightning. To prevent a gas explosion, do not connect the ground wire to a gas pipe.

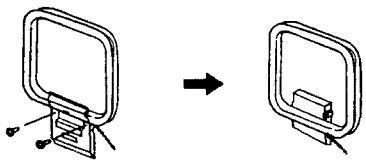




To set up the AM loop aerial
When placed on a flat surface

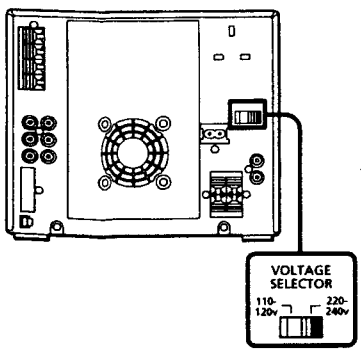


When mounted on a wall



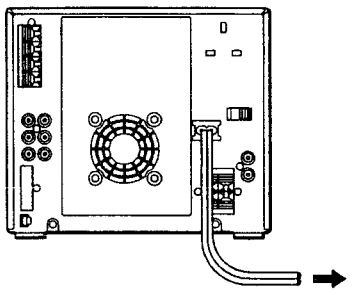
STEP 4 Adjusting the Operating Voltage

Before connecting the power, set both VOLTAGE SELECTOR to the position of your local power line voltage.



STEP 5 Connecting the Power

Connect the mains lead to a wall outlet after you have made all the above connections.

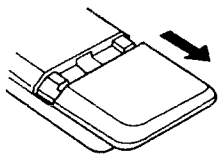


Caution
Before you power on the stereo, turn the VOLUME control counterclockwise to decrease the sound level.

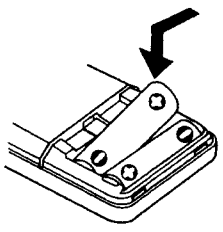
Inserting the Batteries

Install two R6 (size AA) batteries in the supplied remote commander for remote control.

1 Slide the lid to remove it.



2 Insert two R6 (size AA) batteries. Match the + and – to the diagram in the battery compartment.



3 Slide the lid to replace it.

continue to next page →

→ continued

Battery life

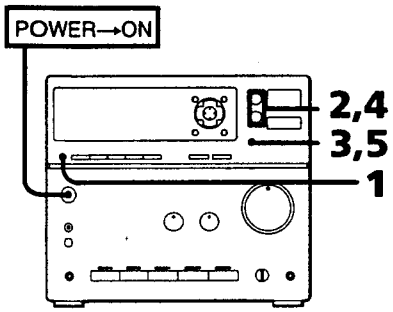
You can expect the remote commander to operate for about six months (using Sony SUM-3 (NS) batteries) before the batteries run down. When the batteries no longer operate the commander, replace all the batteries with new ones.

To avoid battery leakage

If you are not going to use the commander for a long time, remove the batteries to avoid damage caused by corrosion from battery leakage.

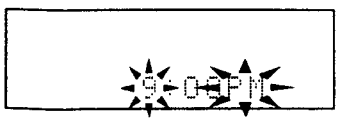
Setting the Clock

The built-in clock shows the time in the display even if the power is off. You need to set the clock to enjoy the timer-activated features of your stereo system.
Use the buttons on the unit to do this operation.



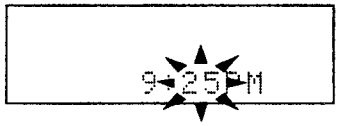
1 Press CLOCK SET.
The hour indication begins flashing.

2 Set the current hour by pressing TUNER/TIMER (+/–) until the correct hour appears.



3 Press MEMORY/NEXT.
The minutes indication begins flashing.

4 Set the current minute by pressing TUNER/TIMER (+/–) until the correct minute appears.



5 Press MEMORY/NEXT.
The clock starts running and the upper dot flashes.
Use the time signal to set the clock accurately.

To correct the clock setting

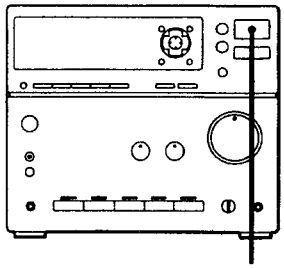
Repeat steps 1 to 5.

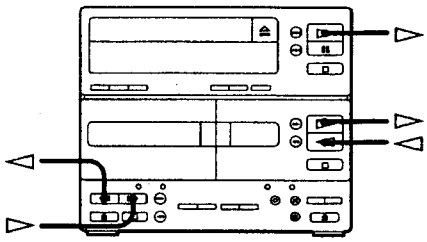
Simple Operation

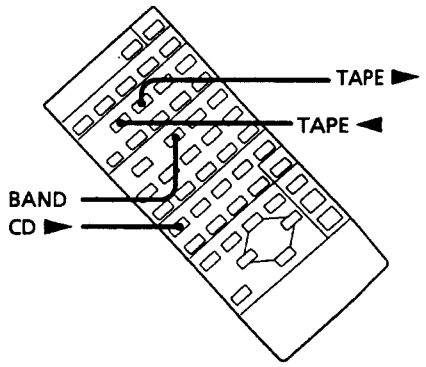
This system is equipped with useful functions that allow you to listen to music by performing a few simple operations.

One Touch Play

This function allows you to listen to music simply by pressing a single button, even if the power is off.







CD player:

Press ▻ on the CD player (or ► on the remote commander) when the power is off. When a CD is in the player, you will be able to start listening to the CD without pressing any other buttons. If no CD is inserted, the system will just turn on.

Tape player:

Press ▻ or ◅ on the tape player (or ► or ◄ on the remote commander) when the power is off. When a tape is in the player, you will be able to start listening to the tape without pressing any other buttons. If no tape is inserted, the system will just turn on.

Tuner:

Press TUNER/BAND when the power is off.
You will be able to start listening to the last received station without pressing any other buttons.

Chapter 2: the CD Player

Playing a CD (normal play)

Playing Tracks in Random Order (shuffle play)

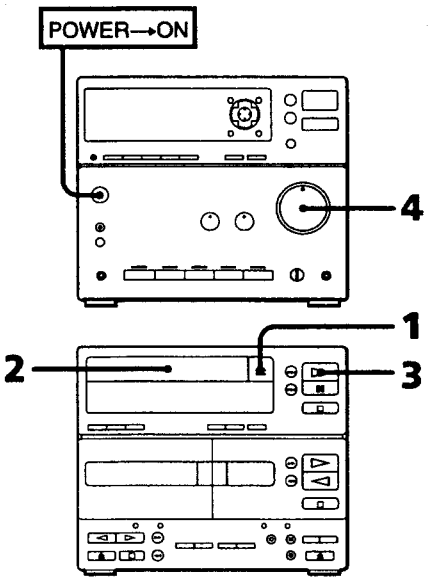
Playing Only the Desired Tracks (delete play)

Playing Tracks in the Desired Order (programme play)

Playing Tracks Repeatedly (repeat play)

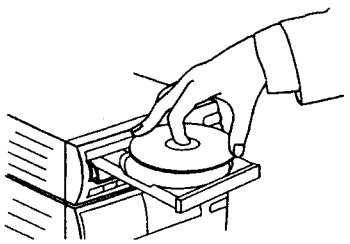
Playing a CD (normal play)

You can play CDs in five modes: normal, shuffle, delete, programme and repeat. The mode decides which tracks (songs) you will listen to, in which order and whether or not they will repeat.
You can operate the stereo system on the unit or from the supplied remote commander. Also, you can play 12 cm (5-inch) and 8 cm (3-inch) CDs. If the CD is supplied with an adaptor, remove it before playing the CD.
Before you play the CD, decrease the sound level by turning the VOLUME control counterclockwise, to avoid damaging the speakers.

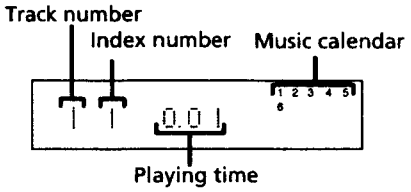


1 Press ⏏ OPEN/CLOSE to open the disc tray.

2 Holding the CD by the edge, place the CD on the CD tray with the label side up. (When you play an 8-cm CD, place it on the inner circle of the disc tray.)



3 Press ▷ on the unit (or press ► on the remote commander).
The disc tray closes and play starts.



4 Adjust the volume.
Turn VOLUME clockwise to turn up the volume, or counterclockwise to turn down. (Or press VOL +/– on the remote commander.)

To	Press*
Stop play	■
Pause	II
Resume play	▷ or II (► or II)
Remove the CD	⏏ OPEN/CLOSE

* The buttons on the remote commander are indicated in parentheses.

One Touch Play feature
Press ▷ on the CD player (or ► on the remote commander) when the power is off. When a CD is in the player, you will be able to start listening to the CD without pressing any other buttons. If no CD is inserted, the system will just turn on.

To find a track directly
You can find a track you want just by pressing the track number on the remote commander.
1 Set the TUNER/EQ/CD selector to CD.
2 Press the numeric button for the track you want.

If the track number is 11 or more
Select the track number with the numeric buttons after you press >10 on the remote commander.
e.g. Press >10, 2, 1 for the track number 21.
Press >10, 2, 10 for the track number 20.
"10" functions as the digit "0".

To find the beginning of a track — Automatic Music Sensor (AMS)
You can locate the beginning of a track while the track is playing or while it's in pause mode.

To locate the beginning of the current or preceding track, press ⏮⏮ (or ⏮ on the remote commander) repeatedly until you find the track you want.

To locate the beginning of the succeeding track, press ⏭⏭ (or ⏭ on the remote commander) repeatedly until you find the track you want.

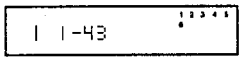
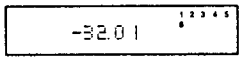
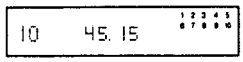
continue to next page →

→ continued

To find a point in a track
You can find a particular point in a track while the track is playing or while it's in pause mode. Use the buttons on the CD player to operate this feature.

To	Do this
Go forward quickly in a track	Hold down ▶▶▶▶I and release it at the desired point.
Go backwards quickly in a track	Hold down I◀◀ ◀◀ and release it at the desired point.
Search quickly without listening	Press II and hold down I◀◀ ◀◀ or ▶▶▶▶I. Press ▷ (II or ▶) again at the desired point.

To check the remaining or total playing time
Use the TIME button on the remote commander.

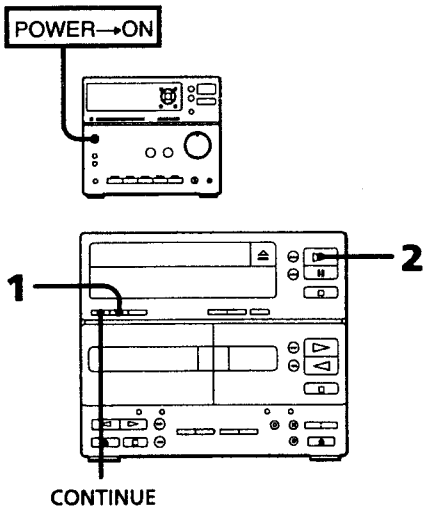
To check	Press
Remaining time in a track	TIME once during play 
Remaining time on the CD	TIME twice during play of the tracks left 
Total number of tracks and total playing time	TIME in stop mode 

Notes
- You can check the remaining time during normal, shuffle, delete, and programme play.
- The total playing time and number of tracks also appear in the display when you press ⏏ OPEN/CLOSE to close the disc tray.
- If the CD has more than 20 tracks, the remaining time in a track appears "--.--".

Notes on handling discs
- To keep the disc clean, handle the disc by its edge. Do not touch the surface.
- Do not stick paper or tape onto the disc.
- Do not expose the CD to direct sunlight or heat sources such as hot air ducts, nor leave it in a car parked in direct sunlight as there can be a considerable rise in temperature inside the car.

Playing Tracks in Random Order (shuffle play)

You can play all the tracks on the CD in random order. Use the buttons on the unit to do this operation.



1 Press SHUFFLE.
"SHUFFLE" appears in the display.

2 Press ▷.
" ⇆ " appears and then all the tracks play in random order.

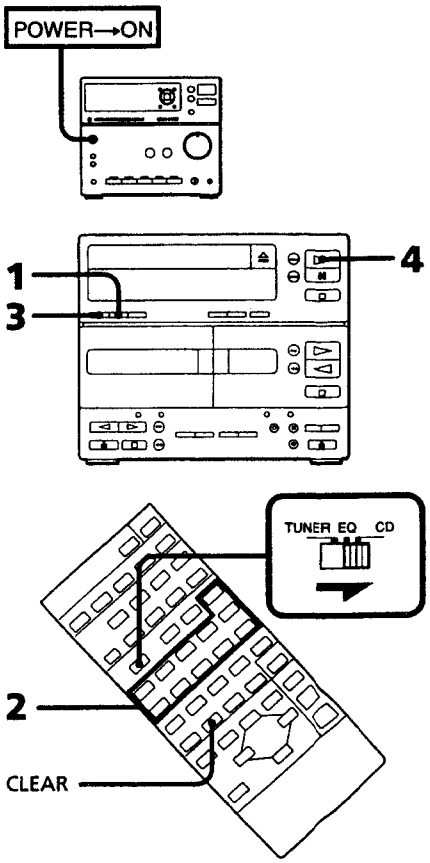
To stop playing
Press ■.

To cancel shuffle play
Press CONTINUE.
"SHUFFLE" disappears from the display, and tracks continue playing in their original order.

To replay the current track during shuffle play
Press I◀◀ ◀◀.
You cannot replay the previous track.

Playing Only the Desired Tracks (delete play)

You can delete unwanted tracks and play the remaining tracks in order.



Before operation
Set the TUNER/EQ/CD selector on the remote commander to CD.

1 Press SHUFFLE so that "SHUFFLE" appears in the display.

2 Press the numeric button for the track you want to delete.
The track number and "OFF" appear in the display.

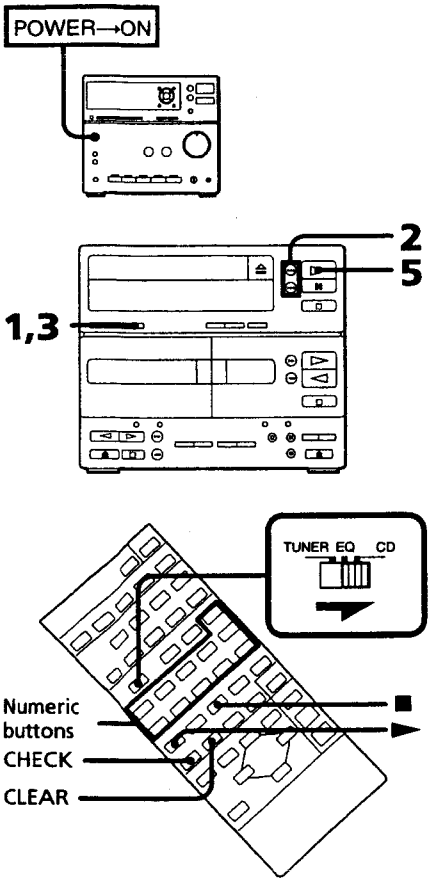
3 Press CONTINUE.
"SHUFFLE" disappears from the display.

4 Press ▷.
The remaining tracks play in order.

To restore all the tracks you have deleted
Press ■ in stop mode.

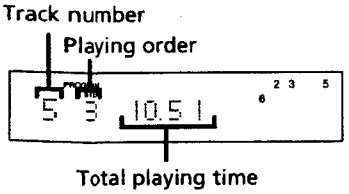
Playing Tracks in the Desired Order (programme play)

You can programme up to 24 tracks to play in any order you choose. You do this by designating the tracks in the order you want them to play.



1 Press PROGRAM.
"PROGRAM" appears in the display.

2 Press ⏮◀◀ or ▶▶⏭ to choose a track.
The track number, the playing order and the total playing time appear. If you want to choose this track, go to the next step. If not, press ⏮◀◀ or ▶▶⏭ again to choose another track.



3 Press PROGRAM.
The chosen track number lights up in the music calendar. If the track number disappears before you press PROGRAM, go back to step 2.

Note
If "–.--" appears instead of the total playing time during programming , this means you have programmed 21 tracks or more. This also means the total time has exceeded 100 minutes.

4 Repeat steps 2 and 3 to programme the remaining tracks in the order you want them to play.

5 Press ▷.
All the tracks play in the order you chose.

To programme using the remote commander

1 Set the TUNER/EQ/CD selector to CD.
2 Press PROGRAM.
3 Press the numeric buttons in the order you want them to play.
4 Press CD ► again.
Playing starts.

To	Press
Check the programme	CHECK repeatedly*
Programme a pause	II**
Stop play	■
Cancel the programme play	CONTINUE***
Erase a track from the end	CLEAR in stop mode
Erase a specific track	CHECK repeatedly so the number of the track lights up, and press CLEAR.
Erase the entire programme	■ once in stop mode and twice while playing

* After the last track appeared "End" appears in the display.
** "P" appears and the total playing time is reset to 0.00.
*** The programme is erased.

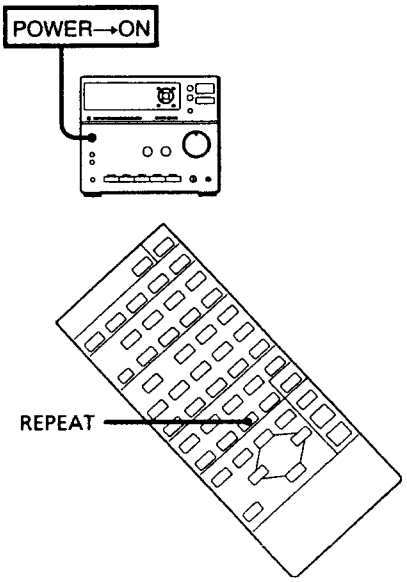
To change the order of programmed tracks
Erase the entire programme and create a new one.

To check the total remaining time of the programmed tracks
Use the button on the remote commander to do this operation.

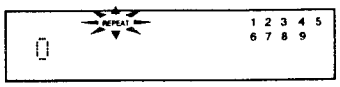
1 Press TIME once to see the remaining time of the track being played.
2 Press TIME again to see the remaining playing time of the whole programme. If you have inserted a pause, the display shows the remaining time until the pause.
3 Press TIME once more to return to the initial display.

Playing Tracks Repeatedly (repeat play)

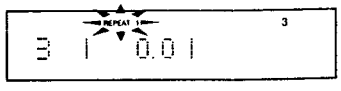
You can choose between two different repeat play modes. One repeats all the tracks in the current play mode; the other repeats a single track. Use the button on the remote commander to do this operation.



Repeating all the tracks (in any play mode)
Press REPEAT once while playing so that "REPEAT" appears in the display.



Repeating a single track (in normal play and delete play)
Press REPEAT twice while playing the desired track so that "REPEAT 1" appears in the display.



To cancel repeat play
Press REPEAT so that "REPEAT" or "REPEAT 1" disappears from the display.

EN
9

Chapter 3: the Radio

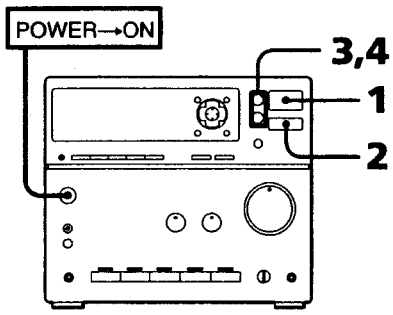
Listening to the Radio

Presetting Radio Stations

Playing Preset Radio Stations

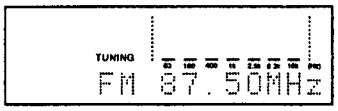
Listening to the Radio

When you want to play a radio programme, you can have the tuner automatically scan the radio frequencies and tune in the stations with clear signals. This feature saves you time in searching for stations with clear signals. However, stations with weak signals may be skipped by automatic tuning. Manually tune in the ones skipped by automatic tuning.

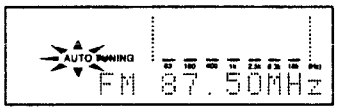


1 Press TUNER/BAND repeatedly until the band you want appears in the display.
As you press TUNER/BAND, the band changes as follows:

FM → MW → SW



2 Press TUNING MODE so that "AUTO" and "TUNING" appear in the display.



3 Press TUNER/TIMER (+/–).
The tuner starts scanning radio frequencies automatically, and stops when it finds a clear station. "TUNED" appears in the display .
"STEREO" also appears if the FM station tuned is broadcast in stereo.

4 If you don't want to listen to the station selected, press TUNER/TIMER (+/–) to restart the scan.

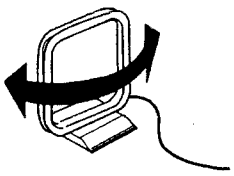
When the desired station is not tuned in

Automatic tuning may skip the station with weak signal. Tune in the station manually.

1 Press TUNING MODE so that only TUNING is lit.
2 Press TUNER/TIMER (+/–) repeatedly until the desired station is tuned in.

To improve MW/SW broadcast reception

Reorient the supplied AM loop aerial for MW and SW.



MW/SW

To change the MW tuning interval

(except for the Middle East model)
The MW tuning interval is preset to 9 kHz in the factory. If you need to change the interval, do as follows :

1 Turn on the power.
2 Tune in any MW station.
3 Turn off the power.
4 Turn the power back on while pressing TUNER/TIMER (+).

After changing the MW tuning interval, reset the preset radio stations. To reset the interval to the factory setting, follow the same procedure.

When an FM programme is not clear to receive

Press STEREO/MONO so that "MONO" appears in the display. There will be no stereo effect, but the reception will improve. Press STEREO/MONO again to restore the stereo effect.

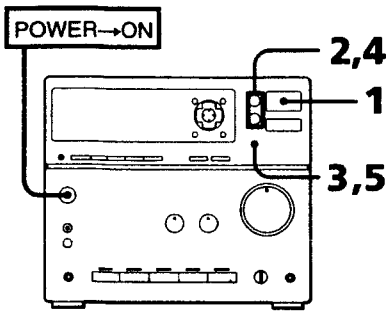
One Touch Play feature

Press TUNER/BAND when the power is off.
You will be able to start listening to the last received station without pressing any other buttons.

Presetting Radio Stations

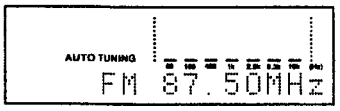
You can store radio frequencies in the tuner's memory to tune in your favourite stations quickly. You can preset up to 20 FM stations, 10 MW stations and 10 SW stations in any order.
Use the buttons on the unit for presetting stations.

Do not unplug the mains lead for 20 minutes after presetting stations in order to maintain the memory. If the memory disappears, preset the stations again.

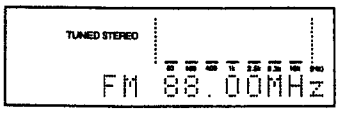


1 Press TUNER/BAND repeatedly until the band you want appears.

FM → MW → SW



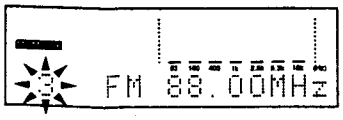
2 Press TUNER/TIMER (+/–) to tune in the station you would like to store.



3 Press MEMORY/NEXT.
The preset station number flashes in the display.

Preset station number

4 Decide on a preset number for the radio station (1 to 20 for FM, 1 to 10 for MW and SW). While "MEMORY" is lit, press TUNER/TIMER (+/–) to display the preset number you decided on.



5 Press MEMORY/NEXT.
"MEMORY" disappears, and the station is stored at the preset number you decided.

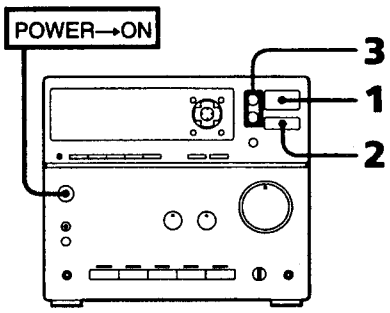
6 Repeat steps 1 to 5 for each station you would like to store.

To erase a stored station
Store a new station at a previously used preset station number. It will erase the old station and replace it with the new station.

If you have trouble storing a station or if you made a mistake
Repeat steps 1 to 5.

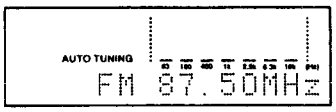
Playing Preset Radio Stations

Once you have preset the stations, use the TUNER/TIMER (+/–) buttons to quickly tune in your favourite stations.

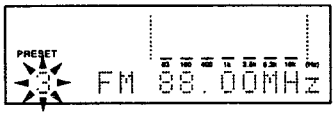


1 Press TUNER/BAND repeatedly to select the band you want.

FM → MW → SW



2 Press TUNING MODE so that "PRESET" appears in the display.



3 Press TUNER/TIMER (+/–) to tune in a preset station.
The station frequency appears and the system begins receiving the stations.

To tune in a preset station directly
Use the buttons on the remote commander to do this operation.

1 Set the TUNER/EQ/CD selector to TUNER.
2 Press the numeric buttons to select the preset station number you want.

Chapter 4: the Tape Player

Playing a Tape

Recording a CD

Recording a CD: Selecting Tape Length Automatically (tape select edit)

Recording a CD: Specifying Tape Length (time edit/just edit)

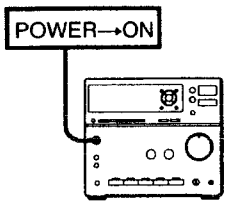
Recording a CD: Specifying Track Order (programme edit)

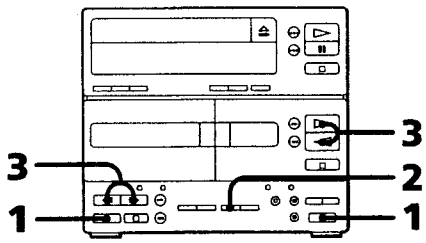
Recording From the Radio

Recording From Another Tape (dubbing)

Playing a Tape

You can use TYPE I (normal), TYPE II (CrO_2) and TYPE IV (METAL) tapes. When you insert the tape, the deck detects the tape type automatically.

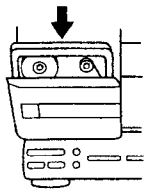




Note

When you use the remote commander for the following operations, set the TAPE DECK A/B selector to A or B to switch the function of the buttons to either deck A or deck B.

1 Press ⏏ to open the tape compartment. Insert a recorded tape in deck A or B with the tape side facing down. Push to close the compartment.



2 Choose single-side, dual-side, or relay play.
The DIRECTION mode setting affects both decks.

To play	Press DIRECTION so that
One side of the tape	⇄ appears
Both sides*	⇆ appears
Both decks in succession**	RELAY appears

* The deck stops automatically after repeating the sequence 5 times.

** See "To play both decks in succession(relay play)."

3 Press ▷ (to play the front side) or ◁ (to play the reverse side).
The tape starts playing.

To	Press
Stop play	■
Pause	❚❚ PAUSE on the deck B
Resume play after pause	❚❚ PAUSE on the deck B or ◁ or ▷
Fast forward	▶▶ for front side ◀◀ for reverse side
Rewind	◀◀ for front side ▶▶ for reverse side
Remove the cassette	⏏

To find the beginning of a track (AMS)

Using the AMS (Automatic Music Sensor) feature, you can quickly find the track you're looking for. The deck senses where a music track begins by detecting a blank space of more than 4 seconds between tracks.
AMS does not function while the other deck is being played or paused.

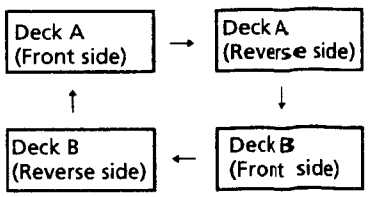
If the side of the cassette being played is the	To play the next track, press	To play the track being played, press
Front side (▷)	▶▶	◀◀
Reverse side (◁)	◀◀	▶▶

To play automatically after fast winding (auto play)

To start playing from the beginning of the front side, press ▷ while holding down AMS ◀◀.
To start playing from the beginning of the reverse side, press ◁ while holding down AMS ▶▶.

To play both decks in succession (relay play)

Relay play always follows the following sequence. When the reverse side of the tape in deck B finishes playing, the following sequence continues 4 more times.



1 Press ⏏ and insert recorded tapes in both decks.
2 Press DIRECTION so that RELAY appears in the display.
3 Press ◁ or ▷ on either deck.

To stop relay play
Press ■ on the playing deck.

If you play both decks at the same time
You hear the sound from deck A.

When listening to a tape recorded with the Dolby* noise reduction system
Press the DOLBY NR button to select B or C. DOLBY NR B or C appears in the display. The setting affects both decks. Dolby noise reduction system reduces tape hiss noise in low-level high-frequency signals.

* Dolby noise reduction manufactured under license from Dolby Laboratories Licensing Corporation.
"DOLBY" and the double-D symbol ⧈ are trademarks of Dolby Laboratories Licensing Corporation.

To reset the counter
Press the COUNTER A/B button to display the counter for the deck you want to reset, and then press RESET.

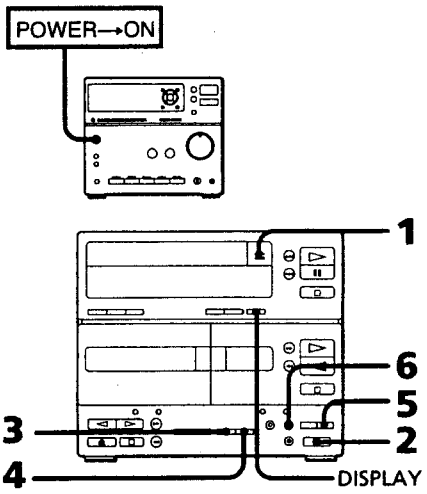
One Touch Play feature
Press ▷ or ◁ on the tape player when the power is off.
When a tape is in the player, you will immediately be able to listen to the tape without pressing any other buttons. If no tape is inserted, the system will just turn on.

Recording a CD

You can record from a CD to a tape. Use TYPE I (normal), TYPE II (CrO_2) or TYPE IV (METAL) tapes.
You cannot listen to other sources while recording.

Recording a CD Automatically

By using the CD SYNCHRO button, you can record from a CD to a tape quickly. Use the buttons on the unit for this operation. (See "Glossary".)



Before operation
1 Press ▷ to select the CD player.
If the player starts playing, press ■ to stop play.
2 Press EFFECT on the amplifier so that "EFFECT OFF" appears in the display.

1 Press ⏏ OPEN/CLOSE on the CD player and place a CD. Then, press ⏏ OPEN/CLOSE again to close the tray.
Total number of tracks and total playing time appear in the display.

2 Press ⏏ and insert a blank tape into deck B.
Make sure the tabs on the cassette have not been removed.

3 Select dual or single-sided recording with DIRECTION and press DISPLAY.

To record	Press DIRECTION so that
One side	⇄ appears
Both sides*	⇆ or RELAY appears

* Recording always stops at the end of the reverse side. Be sure to start from the front side.

4 When you want to reduce the hiss noise in low-level high-frequency signals, press DOLBY NR to select B or C.
Dolby C provides greater noise reduction benefit than Dolby B.

5 Press CD SYNCHRO.
"CD SYNC" appears in the display and the deck B stands by for recording.

6 Press ❚❚ PAUSE on the tape player to release recording pause.
Recording starts.

To stop recording
Press ■ on deck B or the CD player.

To change the display
Press DISPLAY so that CD player display and Tape player display change alternately.

If the CD SYNCHRO button does not operate
It means that you cannot record on this cassette. (The tabs have been removed.)

Adjusting the volume will not affect the recording level
But this control will change the sound levels you hear through the speakers or headphones.

Recording equalized or processed sounds
If audio emphasis setting or a Personal File is selected on the amplifier, the processed sound can be recorded. When playing back a recording that was made of a processed sound, use EFFECT OFF mode. If the processed sound is recorded and then the playback is processed again, the resulting sound may be distorted. To make a flat (unprocessed) recording, use EFFECT OFF mode.

What the ▷ and ◁ indicators indicate
The ▷ and ◁ indicators light to indicate which side starts recording.
They also tell you if a tab has been removed.

If one indicator lights steadily and the other indicator flashes for a few seconds, then disappears
It means that recording will start from the side which indicator lights steadily. If you want to start recording from the other side, press the other side button.

If one indicator lights steadily and the other indicator neither lights nor flashes
It means that you can record on only the side which indicator lights steadily. (The tab on the other side has been removed.)

If one indicator flashes steadily and the other indicator neither lights nor flashes
It means that you can record on only the side for which indicator flashes steadily. Switch sides to start recording by pressing the button of the side which is flashing.

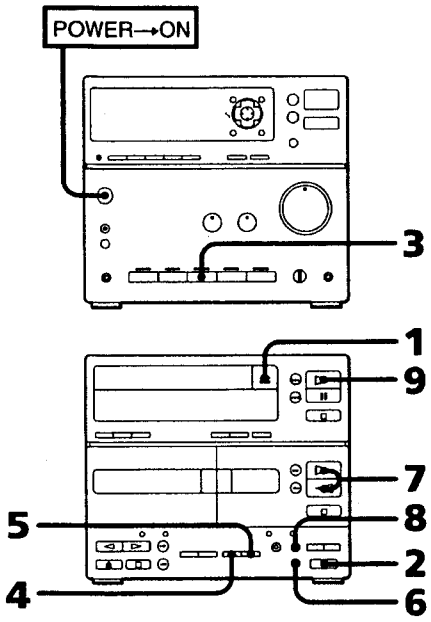
If both indicators neither light nor flash
It means that you cannot record on this cassette. (Both tabs have been removed.)

continue to next page →

→ continued

Recording a CD Manually

You can record a CD as you like, for instance, record just the songs you want or record from the middle of the tape. Before performing any operations, set the amplifier to EFFECT OFF mode.



1 Press ⏏ OPEN/CLOSE on the CD player and place a CD. Then, press ⏏ OPEN/ CLOSE again to close the tray.

2 Press ⏏ and insert a blank tape into deck B. Make sure the tabs on the cassette have not been removed.

3 Press CD to select the CD player.

4 Select dual or single-sided recording with DIRECTION and press DISPLAY.

To record	Press DIRECTION so that
One side	⇄ appears
Both sides*	⇆ or RELAY appears

* Recording always stops at the end of the reverse side. Be sure to start from the front side.

5 When you want to reduce the hiss noise in low-level high-frequency signals, press DOLBY NR to select B or C. Dolby C provides greater noise reduction benefit than Dolby B.

6 Press ● REC.
Deck B stands by for recording.

The ▷ (for front side) or ◁ (for reverse side) indicator lights steadily to show you which side will start recording. The other indicator flashes for a few seconds, then disappears.

For a full explanation of the ▷ and ◁ indicators, see "What the ▷ and ◁ indicators indicate" in "Recording a CD Automatically".

7 If the indicator for the side you want to start recording does not light, press ▷ or ◁ to light the side to start recording. If it lights, skip to step 8.

8 Press ❚❚ PAUSE on the tape player to release recording pause.
Recording starts. You can also start recording by pressing ▷ or ◁.

9 Press ▷ on the CD player.
The CD player starts playing.

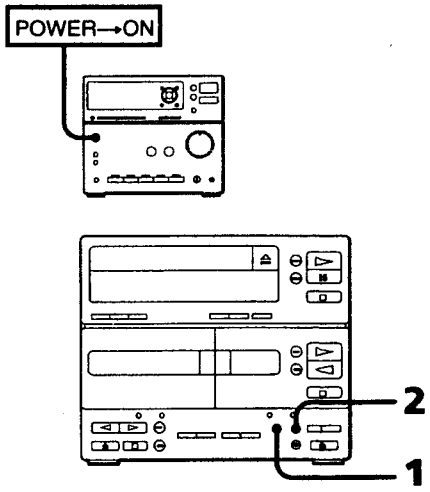
To	Press
Stop recording	■ on the deck B
Pause recording	❚❚ PAUSE on the deck B
Stop CD play	■ on the CD player
Pause CD play	❚❚ on the CD player

Adjusting the volume will not affect the recording level
But this control will change the sound levels you hear through speakers or headphones.

Recording equalized or processed sounds
If an audio emphasis setting or a Personal File is selected on the amplifier, the processed sound can be recorded. When playing back a recording that was made of a processed sound, use EFFECT OFF mode. If the processed sound is recorded and then the playback is processed again, the resulting sound may be distorted. To make a flat (unprocessed) recording, use EFFECT OFF mode.

Inserting a Blank Space During Recording

To activate the AMS function, it is necessary to insert a blank space between tracks.



1 Press O REC MUTE while recording at the position where you want to insert the blank space.
The REC indicator flashes and the tape runs without recording. After about 4 seconds, the REC indicator and the PAUSE indicator light, and the unit enters the recording pause mode.

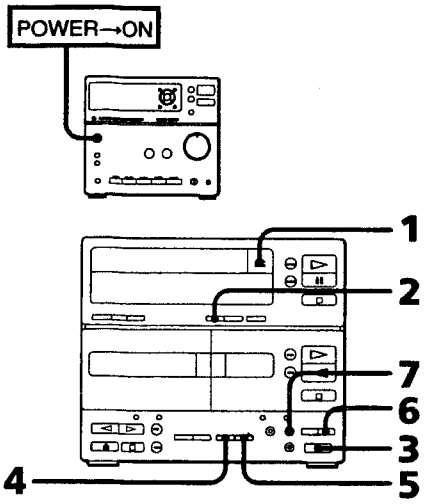
2 Press ❚❚ PAUSE at the position where you want to start recording again.
Recording restarts.

To make a blank of more than 4 seconds
Press O REC MUTE for as long as needed. The indicator on the button flashes faster after 4 seconds have elapsed. The tape pauses when you release O REC MUTE.

To make a blank within 4 seconds
Press ● REC while the indicator on the button is flashing.

Recording a CD: Selecting Tape Length Automatically (tape select edit)

You can have the stereo system select and indicate the most suitable tape length for recording each disc automatically.
You cannot use Tape Select Edit for discs which contain 21 tracks or more.

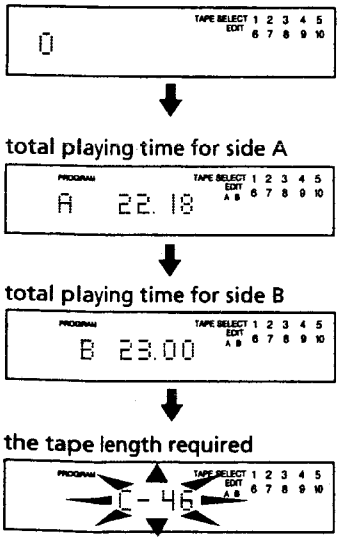


Before operation

1 Press ▷ to select the CD player.
If the player starts playing, press ■ to stop play.
2 Press EFFECT on the amplifier so that "EFFECT OFF" appears in the display.

1 Press ⏏ OPEN/CLOSE on the CD player and place a disc on the tray. Then press ⏏ OPEN/CLOSE again to close the tray.
The total number of tracks and total playing time appear in the display.

2 Press EDIT.
"TAPE SELECT" appears, and the player divides the selections automatically.
Then the display changes as follows:



3 Insert a blank tape of the indicated tape length (or a longer tape) into deck B.

4 Select dual or single-sided recording with DIRECTION and press DISPLAY.

To record	Press DIRECTION so that
One side	⇄ appears
Both sides*	⇆ or RELAY appears

* Recording always stops at the end of the reverse side. Be sure to start from the front side.

5 When you want to reduce the hiss noise in low-level high-frequency signals, press DOLBY NR to select B or C.
Dolby C provides greater noise reduction benefit than Dolby B.

6 Press CD SYNCHRO.
Deck B stands by for recording.

7 Press ❚❚ PAUSE on the tape player to release recording pause.
Recording starts.

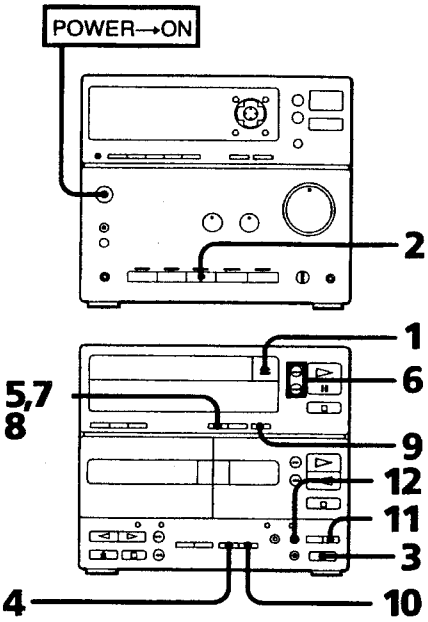
Recording equalized or processed sounds

If an audio emphasis setting or a Personal File is selected on the amplifier, the processed sound can be recorded. When playing back a recording that was made of a processed sound, use EFFECT OFF mode. If the processed sound is recorded and then the playback is processed again, the resulting sound may be distorted. To make a flat (unprocessed) recording, use EFFECT OFF mode.

To	Press
Stop recording	■
Resume play	CONTINUE

Recording a CD: Specifying Tape Length (time edit / just edit)

You can have the stereo system create programmes based on tape length.
The CD player makes programmes that will fit the tape length. For example, if you use a 40-minute tape to record a 46-minute CD, the CD player will automatically choose tracks that will fit within the 40 minutes, filling as much of the tape as possible. The player will not programme tracks beyond track number 20. Use the buttons on the unit for this operation.



Before operation

1 Press ▷ to select the CD player.
If the player starts playing, press ■ to stop play.
2 Press EFFECT on the amplifier so that "EFFECT OFF" appears in the display.

1 Press ⏏ OPEN/CLOSE on the CD player and place a disc on the tray. Then press ⏏ OPEN/CLOSE again to close the tray.
The total number of tracks and total playing time appear in the display.

2 Press CD.
CD is selected.

3 Press ⏏ on the deck B and insert a blank tape into deck B.
Make sure the tabs on the cassette have not been removed.

4 Select dual or single-sided recording with DIRECTION and press DISPLAY.

To record	Press DIRECTION so that
One side	⇄ appears
Both sides*	⇆ or RELAY appears

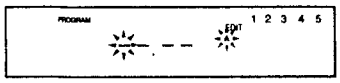
* Recording always stops at the end of the reverse side. Be sure to start from the front side.

continue to next page →

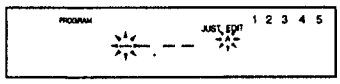
→ continued

5 Choose how you want the tracks to be recorded.

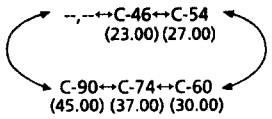
To fit as many tracks on the tape as possible while changing the original CD order as little as possible (time edit)
Press EDIT twice.
"EDIT" appears in the display.



To fit as many tracks on the tape as possible letting the CD player change the original CD order (just edit)
Press EDIT three times.
"JUST EDIT" appears in the display.

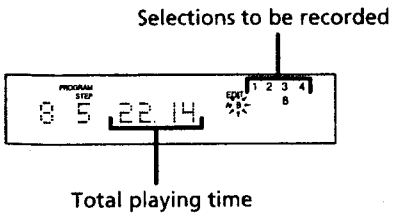


6 Press ⏮ ◀◀ or ▶▶ ⏭ to designate the tape length or "--.--".
Choose the indication for tapes of corresponding minute length.
As you press the button, the indication changes as follows:

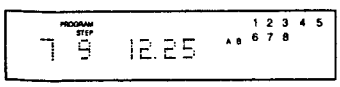


To specify the recording time
Use the numeric buttons (1 to 10) on the remote commander to specify the recording time on each side of the cassette.
e.g. To specify 11 minutes 30 seconds, press 1, 1, 3, 10.

7 Press EDIT.
The player determines the tracks to be recorded on side A automatically.



8 When you record on both sides, press EDIT again.
The player determines the tracks to be recorded on side B.



9 Press DISPLAY to select the display for the tape player.

10 When you want to reduce the hiss noise in low-level high-frequency signals, press DOLBY NR to select B or C.
Dolby C provides greater noise reduction benefit than Dolby B.

11 Press CD SYNCHRO.
Deck B stands by for recording.

12 Press ⏸ PAUSE on the tape player to release recording pause.
Recording starts.

To stop recording
Press ■ on deck B.

To select the desired tracks beforehand
You can place priority on some tracks to be recorded by selecting them before programming them up to 20 tracks. See "Playing Tracks inthe Desired Order (programme play)."

To check the order
Press CHECK repeatedly.
As you press the button, the programme for side A, "P" and the programme for side B appear in order.

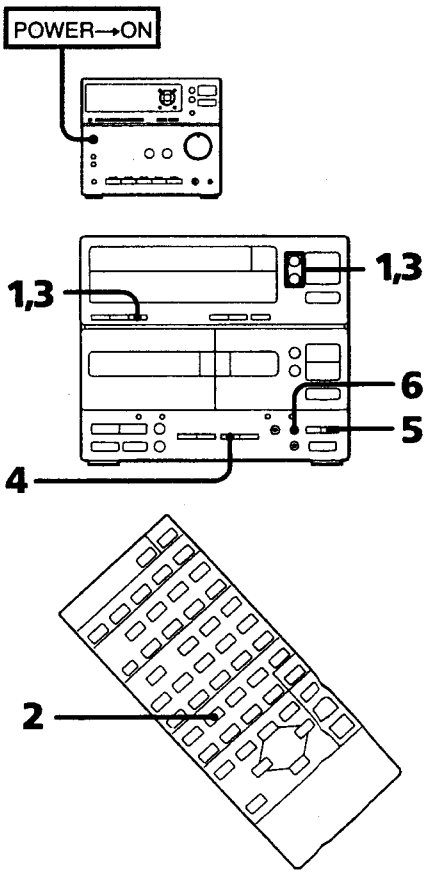
To cancel time edit/just edit
Before you press EDIT on step 5, press ■ to cancel. After you press EDIT on step 5, press CONTINUE.

Recording equalized or processed sounds
If audio emphasis setting or a Personal File is selected on the amplifier, the processed sound can be recorded. When playing back a recording that was made of a processed sound, use EFFECT OFF mode. If the processed sound is recorded and then the playback is processed again, the resulting sound may be distorted. To make a flat (unprocessed) recording, use EFFECT OFF mode.

If programming takes too long during just edit
Some CDs with many tracks may take a while for the CD player to programme. In this case, press ■.
The programme will be the closest time you specified until ■ was pressed.

Recording a CD: Specifying Track Order (programme edit)

You can adjust the total recording time to the tape length while making a programme.



1 Following the procedure "Playing Tracks in the Desired Order (programme play)", programme the tracks you want to record for side A. Make sure to programme the tracks so that the total playing time of side A does not exceed the tape length of one side.

2 Press ⏸ on the remote commander.
"P" appears in the display and the total playing time is reset to "0.00".

3 Programme the tracks you want to record for side B as the same way as you did for side A.

4 Select dual or single-sided recording with DIRECTION and press DISPLAY.

To record	Press DIRECTION so that
One side	⇄ appears
Both sides*	⇆ appears

* Recording always stops at the end of the reverse side. Be sure to start from the front side.

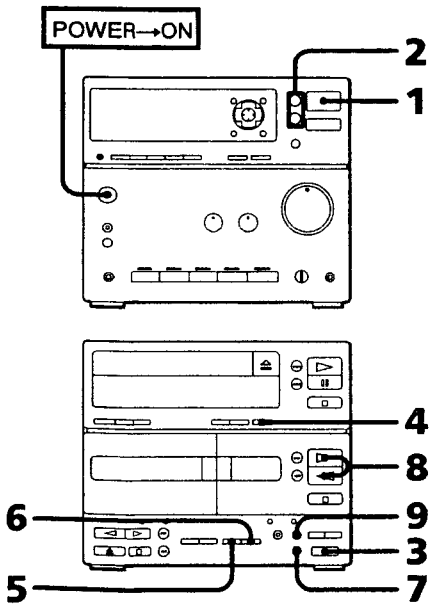
5 Press CD SYNCHRO.
Deck B stands by for recording.

6 Press ❚❚ PAUSE on the tape player to release recording pause.

To	Press
Stop recording	■
Resume play	CONTINUE

Recording From the Radio

You can record from the tuner onto a tape. Use TYPE I (normal), TYPE II (CrO_2) or TYPE IV (METAL) tapes.



1 Press TUNER/BAND several times until the desired radio band appears.

2 Tune in the radio station you want to record. (See "Listening to the Radio", or "Playing Preset Radio Stations" for details.)

3 Press ⏏ and insert a blank tape into deck B.

4 Press DISPLAY to select the display for the tape player.

5 Select dual or single-sided recording.

To record	Press DIRECTION so that
One side	⇄ appears
Both sides*	⇆ or RELAY appears

* Recording always stops at the end of the reverse side. Be sure to start from the front side.

6 When you want to reduce the hiss noise in low-level high-frequency signals, press DOLBY NR to select B or C. Dolby C provides greater noise reduction benefit than Dolby B.

7 Press ● REC.
Deck B stands by for recording and the recording side of the cassette appears in the display.

The ▷ (for front side) or ◁ (for reverse side) indicator lights steadily and shows you which side will start recording. The other indicator flashes for a few seconds, then disappears.

For a full explanation of the ▷ and ◁ indicators, see "What the ▷ and ◁ indicators indicate."

8 If the indicator for the side you want to start recording does not light, press ▷ or ◁ to light the side to start recording. If it lights, skip to step 9.

9 Press ❚❚ PAUSE on the tape player to release recording pause.
Recording starts. You can also start recording by pressing ▷ or ◁ .

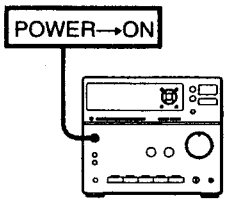
To stop recording
Press ■ .

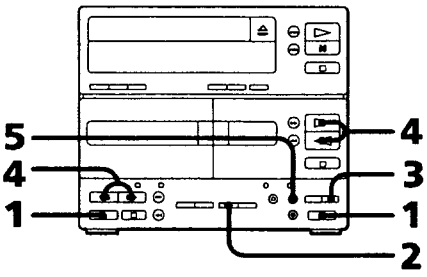
When recording MW/SW broadcasts
Sometimes a whistling sound not normally heard when just listening to a broadcast is audible. If this happens, adjust the position of the AM loop aerial until the whistling sound can no longer be heard.

Adjusting the volume will not affect the recording level
But this control will change the sound levels you hear through speakers or headphones.

Recording From Another Tape (dubbing)

You can record the whole tape onto another automatically. While dubbing, you can listen to the radio or a CD by pressing TUNER or CD. Use the buttons on the unit to do this operation and TYPE I (normal), TYPE II (CrO_2) or TYPE IV (METAL) tape for dubbing.





1 Press ⏏ and insert a recorded tape in deck A and a blank tape in deck B.
Use the ◀◀ /▶▶ buttons on deck A to locate the beginning of the track that you want to record.

2 Choose how you want the tape to record and press DIRECTION to display the mode you want.

Position	Operation
⇄	Dubbing stops at the end of one side
⇆	When the tape in one deck comes to the end of the front side, it reverses immediately regardless of the tape position in the other deck.
RELAY	When the tape in one deck reaches its end of the front side, it stops until the other tape come to its end, and then both tapes reverse together.

continue to next page →

→ continued

3 Press DUBBING MODE to select the dubbing speed you want.
Deck B stands by for recording.
As you press the button, the indication changes as follows:

NORM: dubbing at normal speed
↕
HIGH: dubbing at high speed

4 Choose the same direction on both decks by pressing ▷ or ◁.
To dub on one side, choose ▷ or ◁.
To dub on both sides, choose ▷.

When dubbing at normal speed
To choose the direction on deck A, press ■ immediately after pressing ◁ or ▷.

5 Press II PAUSE.
The tape starts dubbing.
When the tape has started dubbing from the reverse side in ⇄ mode, dubbing will stop at the end of the reverse side.

To stop dubbing
Press ■ on deck B.

You do not have to set DOLBY NR
The tape in deck B is automatically recorded in the same state as the tape in deck A.

If the HIGH/NORM indication flashes 3 times and disappears
It means that you cannot record on this cassette. (The tabs have been removed.)

Listening to another audio source while dubbing is in progress
Select the sound source that you want to listen to, using the function buttons (VIDEO, TAPE, MD/DAT, CD, TUNER) on the amplifier. You can monitor the material being dubbed by selecting TAPE.

During high-speed dubbing
None of the buttons on either deck works, except for the ■ button.

Chapter 5: Sound Adjustment

Adjusting the Sound

Selecting the Audio Emphasis

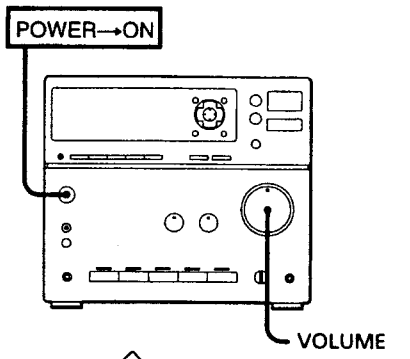
Adjusting the Audio Emphasis

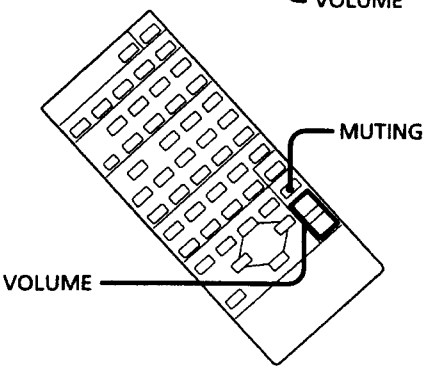
Making a Personal Audio Emphasis File (personal file)

Adjusting the Sound

To fully enjoy the sound coming from your stereo system, make the following audio adjustments. See sections following this one for additional sound adjustments.

Adjusting the Volume



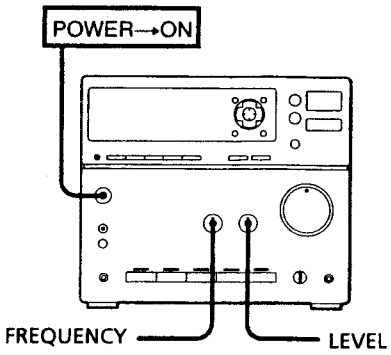


Turn VOLUME or press VOL (+/–) on the remote commander.

To reduce the volume temporarily (muting)
Press MUTING.
"MUTING NOW" flashes in the display and the sound is turned off. To turn the sound back on, press MUTING again. The sound also turns back on when you turn VOLUME to the right or press VOL + on the remote commander.

Reinforcing Bass

Use the Dynamic Bass System to strengthen the bass.



1 Turn LEVEL to adjust the intensity of the effect.
To strengthen the effect, turn LEVEL clockwise.
To weaken the effect, turn LEVEL counterclockwise.

2 Turn FREQUENCY to select the frequency that you want to strengthen. You can strengthen frequencies in the range of approximately 60 Hz to 100 Hz.

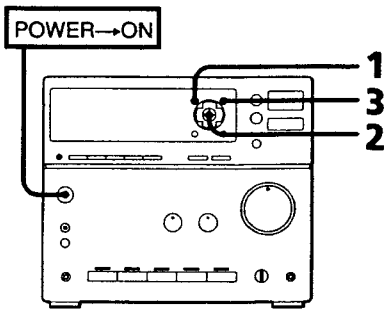
If you do not want the bass strengthened
Turn LEVEL counterclockwise completely.

If you use the Dynamic Bass System with the amplifier
If the bass is too strong, the music will sound distorted. Adjust the bass slowly while listening to music so that you can monitor the effect that the adjustment has.

To listen through the headphones
Connect the headphones to HEADPHONES jack. No sound will come from the speakers.

Selecting the Audio Emphasis

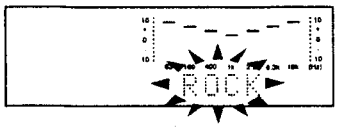
Your stereo system has been factory set to five specially recommended audio emphases. Choose from among these five settings according to the type of music you are listening to.



continue to next page →

→ continued

1 Press MODE ON.
An audio emphasis file flashes in the display.



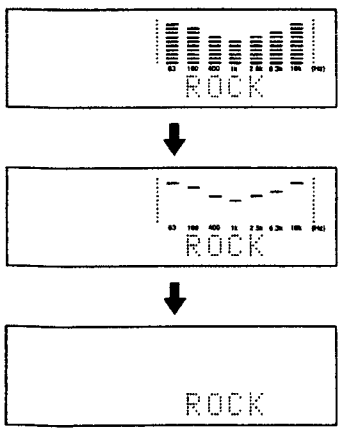
2 Press CURSOR CONTROL towards ▲ or ▼ to select the audio emphasis you want.
The display changes as follows :

ROCK ↔ CLASSIC ↔ JAZZ
↕ ↕
FILE 3 VOCAL
↕ ↕
FILE 2 ↔ FILE 1 ↔ POPS

Choose	To get
ROCK	Lively rhythm and powerful bass
CLASSIC	Sound with a great deal of reverberation such as classical music
JAZZ	Percussive sounds, emphasizing bass audio
VOCAL	Light sound that emphasizes the vocals
POPS	Instrumental sound that emphasizes the rhythms

3 Press MODE OFF.
The audio emphasis is now set.

To change the display
Press DISPLAY on the unit.
Each time you press the button, the display changes to show one of the three displays as follows :



To select the audio emphasis with the remote commander
1 Set the TUNER/EQ/CD selector to EQ.
2 Choose the audio emphasis you want by pressing the numeric buttons.

To change the audio emphasis setting
Repeat the operation above.

To listen to music without any audio effects
Press EFFECT.
"EFFECT OFF" appears in the display.
This feature can be used when you want to listen to the music in its pure, unprocessed state.

You can record sound adjusted using the sound processing effects
You can use deck B to record the source currently being played (deck A, tuner, CD, video, etc.) with a sound effect applied. You can also mix vocals into the recording through a microphone.

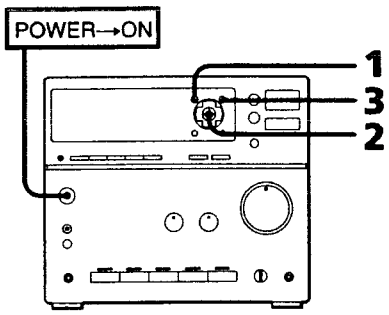
Note
When recording from a tape in deck A, a tape recorded with DOLBY NR off should be used in deck A.

Adjusting the Audio Emphasis

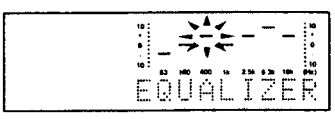
You can adjust the audio emphasis in the following two functions:
• Graphic equalizer
• Surround effect

Adjusting the Sound

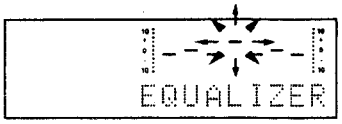
You can adjust the sound by raising or lowering the levels of specific frequency ranges.
Before operation, first select the audio emphasis that you want for your basic sound.



1 Press MODE ON twice (or EQ on the remote commander). "EQUALIZER" and the equalizer curve appear in the display.



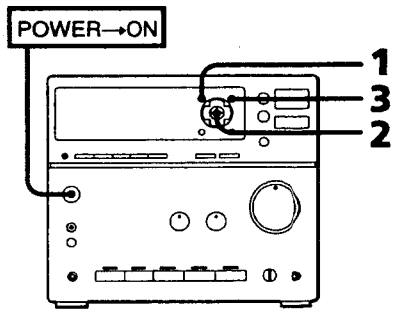
2 Adjust the sound by pressing CURSOR CONTROL.
◄ or ► : Shifts the frequency range to be adjusted to the left or to the right.
▲ or ▼ : Raises or lowers the level of the frequency range centering around the flashing dot.



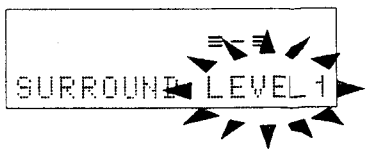
3 Press MODE OFF.
Equalizer curve is now set.

Adjusting the Level of the Surround Effect

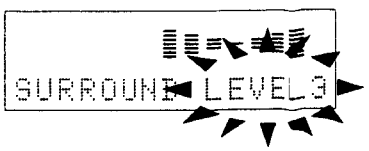
You can enjoy a wide range of effects and sound by selecting one of four surround levels (levels 1, 2, 3 and OFF).
Before operation, first select the audio emphasis that you want for your basic sound.



1 Press MODE ON three times (or SURROUND on the remote commander).
The current level of the surround effect appears in the display.



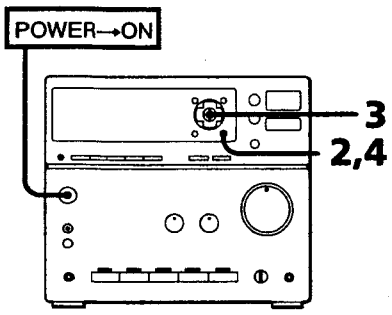
2 Press CURSOR CONTROL towards ▲ or ▼ to select the level of the surround effect.



3 Press MODE OFF.
Surround effect level is now set.

Making a Personal Audio Emphasis File (personal file)

You can create a personal file of audio patterns and store them in the memory of the graphic equalizer. Later, call up an audio pattern to play a favourite tape, CD, or radio programme. Create up to three audio files.
Before operation, first select the audio emphasis that you want for your basic sound. Use the buttons on the unit to do this operation.



1 Obtain the sound effect you want by selecting the audio emphasis and surround effect level.

2 Press EQ MEMORY.
"MEMORY" appears and "FILE 1" flashes in the display.

3 Select the file number (1 to 3) in which you want to store settings by pressing CURSOR CONTROL towards ▲ or ▼.

4 Press EQ MEMORY again.
The adjusted sound effects are stored under the selected file number. The settings previously stored at this memory location are erased and replaced by the new settings.

To call up the personal file

1 Press MODE ON once.
2 Press CURSOR CONTROL towards ▲ or ▼ until the file number of the desired file appears in the display.
(Possible with the remote commander)
Press P.FILE repeatedly.
Each time you press the button, the display changes as follows:

FILE 1 → FILE 2 → FILE 3

If you do not store the adjusted sound effect

When you choose another menu, the adjusted sound effect is lost. Always store adjusted sound effects right away if you want to keep them for future use.

To change the stored sound effects

Perform steps 1 through 4 at the above. Although you can change settings that have been stored, you cannot just erase the settings.

You can record the processed sound

You can record the sound you have adjusted with the Personal File.

Chapter 6: Additional Features

Falling Asleep to Music

Waking Up to Music

Timer-Recording Radio Programmes

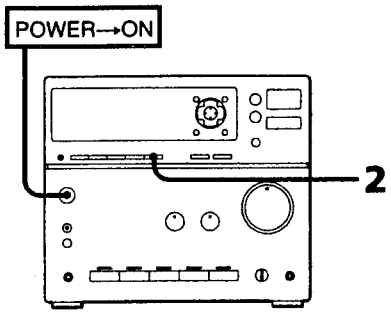
Microphone Mixing

Karaoke: Singing Along (karaoke pon)

Connecting Optional Equipment

Falling Asleep to Music

You can set the stereo system to turn off automatically so you can go to sleep to music.
Before setting the sleep timer, make sure the clock has been set correctly.



1 Play your favourite sound source (a tape, an MD, the tuner or a CD).

2 Press SLEEP while the source is playing to choose how long you want the music to play.
"SLEEP" and the minutes indication appear in the display. As you press SLEEP, the indication decreases by ten minutes from 90 to 10.

The power will turn off after 90 to 10 minutes depending on the length of time you chose.

90min → 80min → ...→ 10min → OFF

To cancel the sleep timer
Set the timer to "OFF".

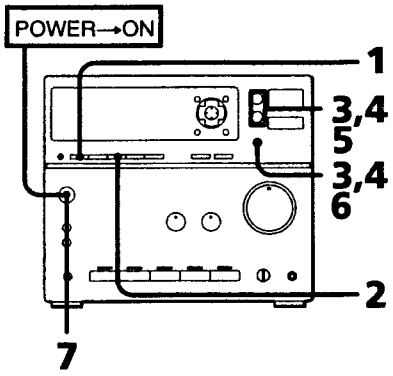
To check the remaining time before the sleep timer turns off the system
Press SLEEP once.
The remaining time in minutes is displayed for several seconds.

To change the remaining time while the sleep timer is in operation
Press SLEEP repeatedly and select the remaining time you want.

To turn off the system before the sleep timer turns off the system
Press SYSTEM POWER.

Waking Up to Music

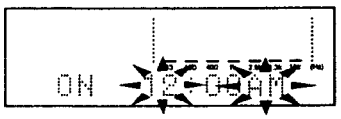
You can wake up to music at a preset time. You need only set the timer once.
You can select the DAILY timer which is activated every day and the ONCE timer which is activated just once.



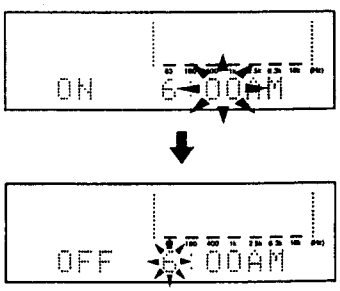
Before setting the timer
1 Make sure the clock is set correctly.
2 Set the condition of the sound when the power turns on.
3 To wake up by the sound of the tuner, tune in the preset station you want to hear beforehand.

1 Press TIMER SET.
The ONCE, DAILY and REC TIMER indicators flash and "Select timer" flashes in the display.

2 Press DAILY or ONCE.
The indicator for DAILY or ONCE lights up. The hour digits flash in the display.



3 Set the hour you want the music to go on by pressing TUNER/TIMER (+/–), then press MEMORY/NEXT. Set the minutes the same way.
The hour digits flash again.



4 Set the hour you want the music to go off by pressing TUNER/TIMER (+/–), then press MEMORY/NEXT. Set the minutes the same way.
The sound source setting screen appears.

5 Choose a sound source by pressing TUNER/TIMER (+/–).
Each time you press the button, the display changes as follows:

CD PLAY ↔ TUNER
↕ ↕
MD/DAT PLAY ↔ TAPE PLAY

6 Press MEMORY/NEXT. The preset items appear in the display sequentially.

To play	Do this
a CD	Insert a CD.
a Tape	Insert a tape in deck A or B with the side you want to play facing towards you.

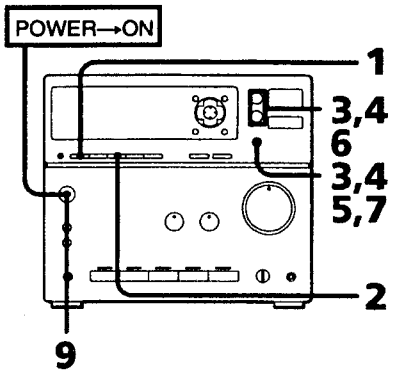
7 Press SYSTEM POWER to turn off the system.
About 20 seconds before the preset time, the power will go on and the music will play. At the turn-off time, the power will go off again.

If you made a mistake during setting procedure
Repeat steps 1 through 7.

To check the preset items
To change the timer settings
To cancel the timer
To activate the timer again
See "Timer-Recording Radio Programmes".

Timer-Recording Radio Programmes

You can set the timer to record the radio at a certain time. This timer works only once for each setting. The volume level is automatically set to MIN.
You can record with a Sony MD recorder or a DAT deck with AU BUS. Be sure to connect the equipment to the AU BUS jack.

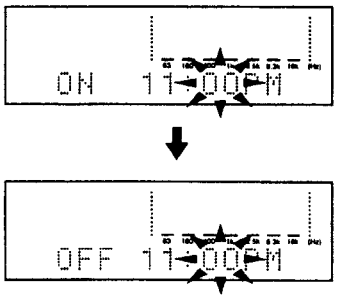


Before setting the timer
1 Make sure the clock is set correctly.
2 Tune in the preset station, and if necessary, select the sound effects that you want to record.

1 Press TIMER SET.
The ONCE, DAILY and REC TIMER indicators flash, and "Select timer" appears in the display.

2 Press REC TIMER so that the REC TIMER indicator lights up.
The hour digits flash in the display.

3 Set the hour you want to start recording by pressing TUNER/TIMER (+/–), then press MEMORY/NEXT. Set the minutes the same way. The hour digits flash again.



4 Set the hour you want to stop recording by pressing TUNER/TIMER (+/–), then press MEMORY/NEXT. Set the minutes the same way.

5 Press MEMORY/NEXT so that "TUNER to TAPE" flashes.

6 Press TUNER/TIMER (+/–) to select the recording equipment.
Each time you press the button, the display changes as follows:

TUNER to TAPE ←
↕
TUNER to MD
↕
TUNER to DAT ←

7 Press MEMORY/NEXT.
The preset items appear in the display sequentially.

8 Prepare the recording equipment.

To record on a tape
Insert a tape into deck B.
If necessary, select the direction mode and Dolby NR.

To record on a MiniDisc
Insert a MiniDisc into the MD recorder.

9 Press SYSTEM POWER to turn off the system.

To check the preset items
Press ONCE, DAILY or REC TIMER so that the indicator for the timer you want lights up. The preset items appear in the display sequentially, then the original display returns. (Press again when the indicator goes off.)

To cancel the timer
Press ONCE, DAILY or REC TIMER twice so that "TIMER OFF" appears in the display and the indicator for the timer you want to cancel goes off.

To activate the timer again
Press ONCE, DAILY or REC TIMER and make sure that the preset items appear in the display. Then, the original display returns.

Notes on tape direction when setting the timer
- When using the wake-up timer:
  When tape playback is set with the wake-up timer, the tape plays back in the direction currently displayed. Always confirm the tape direction before turning off the power.
- When using the recording timer:
  Recording starts in the tape direction currently displayed. To start recording on the side of the tape facing you, be sure to set the tape direction to ▷.
  If the recording timer is set with the tape direction set to ◁, recording starts on the opposite side of the tape, and stops when the end of the opposite side of the tape is reached. Always confirm the tape direction before turning off the power.

continue to next page →

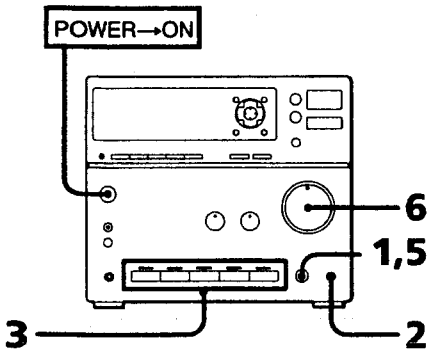
→ continued

If the power is on at the preset time
The sound source will automatically change to the tuner, but tuner recording will not start.

Notes
- If the timer-on and -off times are the same, "OFF TIME NG!" appears in the display and you cannot set the timer.
- The operation initiated by the timer actually starts 30 seconds before the timer-on time (10 seconds before the power turns on). If you perform another operation during these thirty seconds, the timer operation will not be performed normally.

Microphone Mixing

You can "mix" sounds by playing one of the components and singing or speaking into a microphone (not supplied). The mixed sounds can then be recorded on a tape.



1 Turn MIC LEVEL to MIN to turn down the microphone control level.

2 Connect a microphone at the MIX MIC jack.

3 Press one of the function buttons to select a sound source and play it.

4 Sing or speak into the microphone.

5 Adjust the microphone volume level using MIC LEVEL.

6 Adjust VOLUME. If you hear acoustic feedback, move the microphone away from the speakers or change the direction of the microphone.

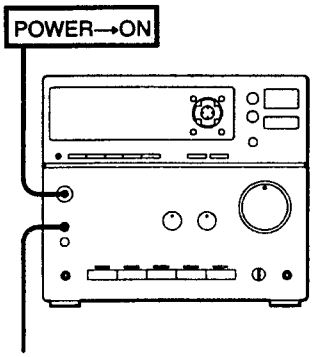
7 If you want to record the mixed sound, insert a tape in deck B and start recording.

To record from the microphone only
1 Press CD to select the CD player. If a CD is being played, press ■ on the CD player to stop playing.
2 Start recording.
3 Sing or speak into the microphone.

When you finish mixing
Disconnect the microphone and adjust the MIC LEVEL control to the minimum level.

Karaoke: Singing Along (karaoke pon)

You can minimize the singer's voice, "vocal reduction," so you can sing along with any stereo CD or tape. When you want to record the sound of the CD or tape and your voice, operate steps below, then operate "Microphone Mixing".
Use the buttons on the unit to do this operation.



KARAOKE PON

Press KARAOKE PON so that "KARAOKE PON ON" appears. To cancel vocal reduction, press KARAOKE PON again so that "KARAOKE PON OFF" appears in the display.

Notes on vocal reduction
The singer's voice may not be reduced completely for the following reasons:
- Monaural recorded source (Instruments may also be reduced.)
- Only a few instruments are playing in the stereo recorded source
- A duet is being played
- The source has strong echoes or chorus
- The singer's voice on the source deviates from the centre
- The voice on the source is singing in high soprano or tenor

Note
When recording from tape with karaoke function, a tape recorded with DOLBY NR off should be used in deck A.

Connecting Optional Equipment

For greater enjoyment of your stereo system, you can connect other components to the stereo. You can connect:

- an MD recorder or DAT deck
- surround speakers
- a microphone
- headphones
- a VCR

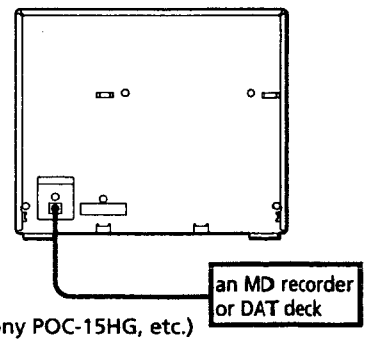
Connecting an MD recorder or a DAT deck

Select one of the following two connections, depending on the equipment to be connected and the method of recording.

- an MD recorder or DAT deck for digital recording
- an MD recorder or DAT deck for analog recording

To connect an MD recorder or a DAT deck for digital recording

rear panel of the HTC-H2900

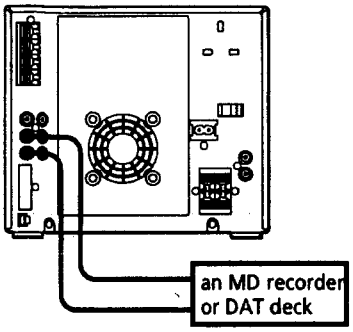


(Sony POC-15HG, etc.)

Connect the DIGITAL IN jack of the MD recorder or DAT deck to the CD DIGITAL OUT OPTICAL jack on the rear panel of the HTC-H2900 with the Optical Cable (Sony POC-15HG etc.)
You can record from the CD into the MD recorder or DAT deck digitally.

To connect an MD recorder or a DAT deck for analog recording

rear panel of the STR-H2900



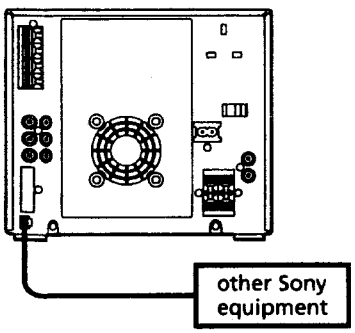
1 Connect the LINE IN jacks of the MD recorder or DAT deck to the MD/DAT OUT jacks on the rear panel of the STR-H2900 with an audio cord.

Connect the LINE OUT jacks of the MD recorder or DAT deck to the MD/DAT IN jacks on the rear panel of the STR-H2900 with an audio cord.
Make sure you connect the plugs to jacks of the same colour.

2 Press one of the function buttons (or FUNCTION on the remote commander) to select the sound sources.
You can record from the sound sources of the stereo into the MD recorder or DAT deck in analog sound.
You can also listen to the sound from the MD recorder or DAT deck by pressing the MD/DAT button.

To connect other equipment with the AU BUS jack

rear panel of STR-H2900



You can connect other Sony equipment with AU BUS to the AU BUS jack.

You can use Automatic Source Selection, Synchronized Recording and Timer Recording with the connected equipment. However, these features may not be provided on some models.

To control an MD with the supplied remote commander

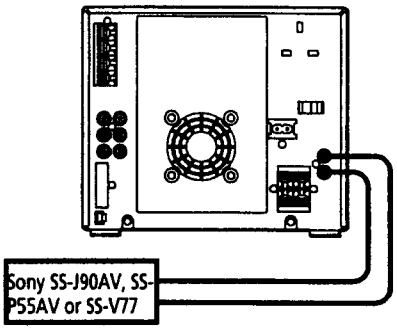
The remote commander provided with this unit is equipped with MD operation buttons, and can be used to control the basic functions of Sony MD recorder.

Connecting Audio Optional Equipment

To connect surround speakers

You can connect a surround speaker system (Sony SS-J90AV, SS-P55AV or SS-V77; not supplied) to the SURROUND SPEAKER jacks. When connecting speakers purchased separately, disconnect the connecting cords for the speakers provided. For details, refer to the instructions provided with the speakers.

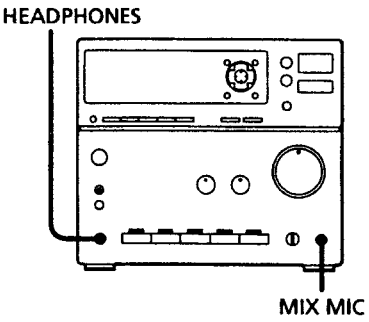
rear panel of the STR-H2900



To connect a microphone or headphones

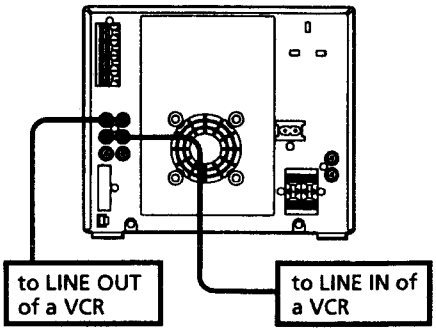
You can connect the microphone (mini-jack) to the MIX MIC jack on the front panel of STR-H2900.
You can connect the headphones (stereo-minijack) to the HEADPHONES jack on the front panel of STR-H2900.

front panel of STR-H2900



Connecting a VCR

rear panel of the STR-H2900



1 Connect the LINE OUT jacks of the VCR to the VIDEO IN jacks on the rear panel of STR-H2900 with the audio/video connecting cable.
Make sure you connect the plugs to jacks of the same colour.

You can connect the LINE IN jacks of the VCR to the MD/DAT OUT jacks on the rear panel of STR-H2900 with the audio/video connecting cable.

2 Press VIDEO (or press FUNCTION on the remote commander until VIDEO indication lights).
The connected sound comes through the speakers.
You can also record the VCR sound.

For Your Information

Precautions

Troubleshooting Guide

Maintenance

Specifications

Glossary

Index to Parts and Controls

Index

Precautions

If you have any questions or problems concerning your stereo system, please consult your nearest Sony dealer.

On operating voltage
Before operating the stereo system, check that the operating voltage of your stereo system is identical with the voltage of your local power supply.

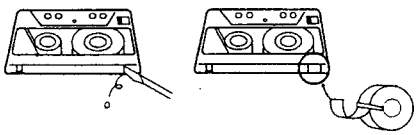
Operating voltage	110 – 120 V AC or 220 – 240 V AC adjustable, 50/60 Hz

On safety
- The unit is not disconnected from the AC power source (mains) as long as it is connected to the wall outlet, even if the unit itself has been turned off.
- Unplug the system from the wall outlet (mains) if it is not to be used for an extended period of time. To disconnect the cord (mains lead), pull it out by the plug. Never pull the cord itself.
- Should any solid object or liquid fall into the component, unplug the stereo system and have the component checked by qualified personnel before operating it any further.
- AC power cord must be changed only at the qualified service shop.

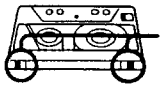
On installation
Place the stereo system in a location with adequate ventilation to prevent heat build-up in the stereo system.

On condensation in the CD player component
If the system is brought directly from a cold to a warm location, or is placed in a very damp room, moisture may condense on the lens inside the CD player. Should this occur, the CD player will not operate. Remove the CD and leave the system turned on for about an hour until the moisture evaporates.

To save a tape permanently
To prevent a tape from being accidentally recorded over, break off the cassette tab from side A or B as illustrated. If you later want to reuse the tape for recording, cover the broken tab with adhesive tape.



When you are using a TYPE II (CrO_2) or TYPE IV (METAL) cassette, be careful not to cover the detector slots which allow the tape player to automatically detect the type of tape.



In case colour irregularity is observed on nearby TV screen
With the magnetically shielded type of the speaker system, the speakers can be installed near a TV set. However, colour irregularity may still be observed on the TV screen depending on the type of your TV set.

If colour irregularity is observed...
Turn off the TV set once, then turn it on after 15 to 30 minutes.

If colour irregularity is observed again...
Place the speakers farther away from the TV set.

Troubleshooting Guide

If you run into any problem using the stereo, use the following check list. And first check the following points:

- The power cord is connected firmly.
- The speakers are connected correctly and firmly.

Should any problem persist after you have made the checks below, consult your nearest Sony dealer.

Tuner

"TUNED" flashes in the display.
→Adjust the aerial.

"STEREO" flashes in the display.
→Adjust the aerial.

Severe hum or noise.
→ Adjust the aerial.
→ The signal strength is too weak. Connect the external aerial.
→ Connect the ground wire.

A stereo FM programme cannot be received in stereo.
→ Press STEREO/MONO so that "STEREO" appears.

Tape Player

The tape does not record.
→ No tape in the cassette holder.
→ The tab has been removed from the cassette.
→ The tape has reeled to the end.

The tape does not record nor playback or there is a decrease in sound level.
→ The heads are dirty. Clean them.
→ Magnetic deposits have built-up on the record/playback heads.*

There is excessive wow or flutter, or the sound drops out.
→ The capstans or pinch rollers are contaminated.*

The tape does not erase completely.
→ Magnetic deposits have built-up on the record/playback heads.*

Noise increases or the high frequencies are erased.
→ Magnetic deposits have built-up on the record/playback heads.*

* See "Maintenance".

CD Player

The CD tray does not close.
→ The CD is not placed correctly.

The CD will not play.
→ The CD is dirty.
→ The CD is inserted label side down.
→ The player is in pause mode.
→ Moisture condensation has built up.
Leave the system turned on for about an hour until the moisture evaporates.

Play does not start from the first track.
→ The player is in programme or shuffle mode. Press CONTINUE.

" " is displayed.
→ ▶▶▶▶| was repeatedly pressed at the end of the CD. Press |◀◀ ◀◀ (or |◀◀ on the remote commander) to return to the normal display.

General

There is no sound.
→ Rotate VOLUME clockwise.
→ The headphones are connected. Disconnect them.

Sound comes from one channel or unbalanced left and right volume.
→ Check the speaker connections of the inoperative channel.

The left and right sound are reversed.
→ Check the speaker connection and speaker placement.

Bass is lacking or the location of the musical instruments is apparently imprecise.
→ Check the speaker connection for proper phasing.

There is severe hum or noise.
→ A TV or VCR is too close to the stereo system. Move the stereo system away from the TV or VCR.

"12:00AM" flashes in the display.
→ A power interruption occured. Set the clock and timer settings again.

The remote commander does not function.
→ The batteries have run down. Replace both batteries.
→ There is an obstacle between the remote commander and the system. Remove the obstacle.

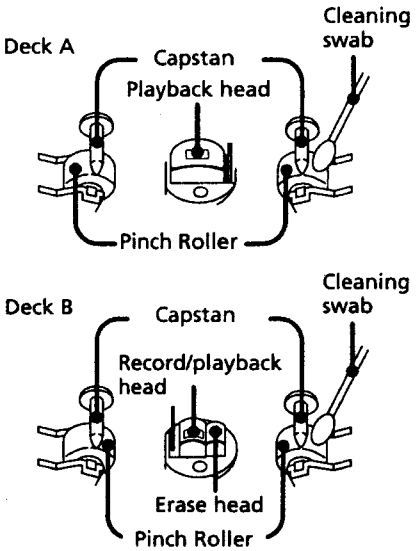
Restoring the factory settings

For the tuner
After unplugging the power cord, hold down TUNER/BAND and then plug the power cord back into the wall outlet.

Maintenance

To clean the tape heads and tape path
Contaminated tape heads cause poor recording or sound drop-out in playback. We recommend cleaning after every 10 hours of operation.

Open the cassette holder and wipe the heads, the pinch rollers and the capstans with a cleaning swab slightly moistened with cleaning fluid or alcohol. Wipe the parts shown below:



Insert a tape when the areas cleaned are completely dry.

To demagnetize the tape heads
After 20 to 30 hours of use, enough residual magnetism will have built up on the heads to begin to cause loss of high frequencies and hiss. At this time, demagnetize the heads and all metal parts in the tape path with a commercially available tape head demagnetizer. Refer to the instructions of the demagnetizer.

To clean the cabinet
Use a soft cloth slightly moistened with mild detergent solution.

To clean the CD
When a CD is dirty, clean it with a cleaning cloth. Wipe the CD from the centre out.

Notes on CD
- Do not use solvents such as benzene, thinner, commercially available cleaners, or anti-static spray intended for vinyl LPs.
- If there is a scratch, dirt or fingerprints on the CD, it may cause a tracking error.

Specifications

CD player section (HTC-H2900)

System: Compact disc digital audio system
Laser: Semiconductor laser
Wavelength: 780 – 790 nm
Frequency response: 2 Hz – 20 kHz
Signal-to-noise ratio: More than 90 dB
Dynamic range: More than 90 dB

Tape player section (HTC-H2900)

Recording system: 4-track 2-channel stereo
Frequency response:
(DOLBY NR OFF)
40 – 13,000 Hz (±3 dB), using Sony TYPE I cassette
40 – 14,000 Hz (±3 dB), using Sony TYPE II cassette
40 – 15,000 Hz (±3dB), using Sony TYPE IV casette
Wow and flutter: 0.1% WRMS ±0.3%(DIN)

Tuner section (STR-H2900)

FM stereo, FM/AM superheterodyne tuner

FM tuner section

Tuning range: 87.5 – 108.0 MHz
For customers who purchased this unit in JAPAN: 76.0 – 108.0 MHz
Antenna terminals: 75 ohm unbalanced
Intermediate frequency: 10.7 MHz

AM tuner section

Tuning range
For Middle East
MW: 531 – 1,602 kHz
SW: 5.95 – 17.90 MHz
For other countries
MW: 530 – 1,710 kHz (with the MW tuning interval set at 9 kHz)
SW: 5.95 – 17.90 MHz
Aerial: AM loop aerial, External aerial terminals
Intermediate frequency: 450 kHz

Amplifier (STR-H2900)

Continuous RMS power output: 50 + 50 watts (6 ohms at 1 kHz, 5%THD)
Peak music power output: 700 watts (4 speaker driven)
Inputs
MIX MIC (mini jack): Sensitivity 1 mV, impedance 10 kilohms
MD/DAT (phono jacks):
VIDEO (phono jack): Sensitivity 450 mV, impedance 47 kilohms
Outputs
HEADPHONES (stereo mini jack): accepts headphones of 8 ohms or more
MD/DAT (phono jacks): voltage 250 mV, impedance 1 kilohms
Dimensions
HTC-H2900:
Approx. 225 x 195 x 225 mm (w/h/d) (8 7/8 x 7 3/4 x 10 1/2 inches)
STR-H2900:
Approx. 225 x 195 x 265 mm (w/h/d) (8 7/8 x 7 3/4 x 10 1/2 inches)
Mass
HTC-H2900: Approx. 3.5 kg (7 lb 11 oz)
STR-H2900: Approx. 4.8 kg (10 lb 9 oz)

Speaker (SS-H2900)

System: 3-way
Speaker units
Woofer: 13 cm dia., cone type
Tweeter: 6 cm dia., cone type
Super tweeter: 2 cm dia., cone type
Rated impedance: 6 ohms
Dimensions
Approx. 195 x 390 x 225 mm (w/h/d) (8 3/8 x 17 5/8 x 10 7/8 inches)
Mass: Approx. 4.2kg (14 lb 2 oz)

Supplied accessories

AM loop aerial (1)
Remote commander RM-S29E (1)
Sony SUM-3 (NS) batteries (2)
FM lead aerial (1)
Flat cord (1)
Mains lead (1)
Speaker cords (2)

General

Power requirements: 110 – 120 V or 220 – 240 V AC Adjustable, 50/60 Hz
Power consumption: 140 watts

Design and specifications subject to change without notice.

Glossary

Notes on the Recording Functions

What is Dolby NR?

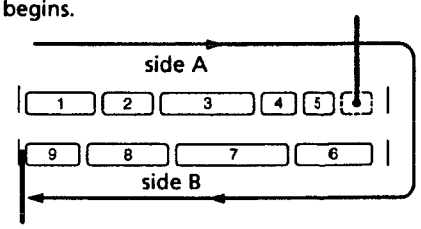
Dolby NR is a recording technology that reduces the high-frequency tape hiss that is audible when listening to soft music. This unit allows you to choose between two types of noise reduction, Dolby B and Dolby C. Although Dolby C provides the greater noise reduction benefit, if you intend to playback your tapes on a headphone stereo unit or other tape player that is only equipped with Dolby B, we recommend that you record your tapes in Dolby B.

* Dolby noise reduction manufactured under license from Dolby Laboratories Licensing Corporation.
"DOLBY" and the double-D symbol ⊡ are trademarks of Dolby Laboratories Licensing Corporation.

What is Synchronized CD recording?

This function synchronizes the operation of the CD player and the cassette deck to make recording easier.

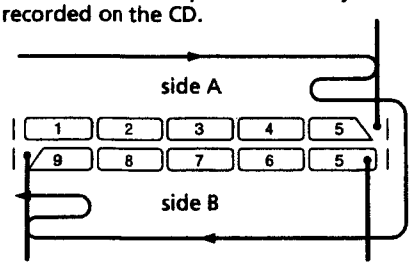
When the CD enters the paused mode, the deck continues recording silence until the end of side A is reached; the tape then reverses and recording on side B begins.



Once all of the selected tracks have been recorded, the tape records about four seconds of silence and then stops.

What is Fade Synchro?
This function makes it possible to slowly fade out a recording so that a track is not abruptly cut off at the end of the tape.
If the end of side A of the cassette is reached in the middle of a track, the tape automatically rewinds to the beginning of that track and then begins recording the same track again. When the end of the tape approaches during the second recording, the volume is automatically faded out. (When making a one-sided recording, the recording then ends at this point.)

Assume that the tracks are being recorded in the sequence that they are recorded on the CD.

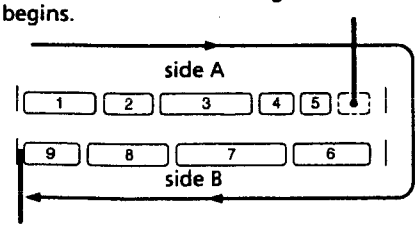


Just as with side A, the last track at the end of side B is faded out.

Recording starts on side B from the start of the track that was faded out at the end of side A.

The automatic operation is as follows if you have programmed the sequence of tracks that you want to record and the total length of the tracks is shorter than the recording time of one side of the tape:

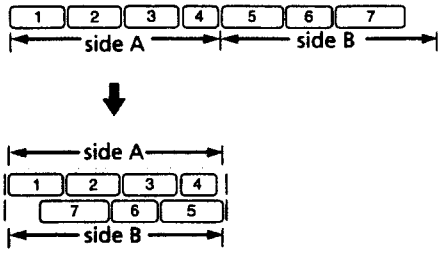
When the CD enters the paused mode, the deck continues recording silence until the end of side A is reached; the tape then reverses and recording on side B begins.



Once all of the selected tracks have been recorded, the tape records about four seconds of silence and then stops.

What is Tape Select Edit?
Tape Select Edit is a function that selects the exact length of tape needed to record a particular CD. Once you insert a CD and press the button, the CD is recorded (with all of the tracks in the same sequence as on the CD) on sides A and B automatically. The optimum length of time needed to record the total playback time is shown on the display. Using a tape of the indicated length makes it possible to record the entire CD without any tracks being cut off in the middle.

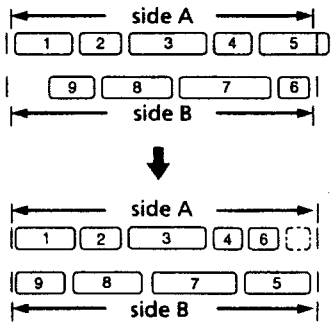
When the tracks are to be recorded in sequence, they are divided between sides A and B and a tape length is selected that will allow for recording without any tracks being cut in the middle and that will leave as little blank tape as possible.



Note
The Tape Select Edit function does not work for discs which contain more than 20 tracks.

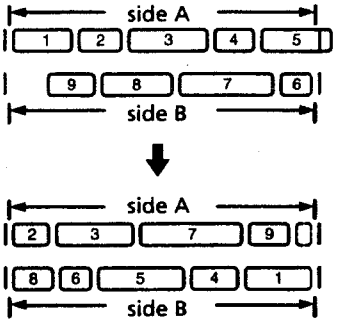
What is Time Edit?
This function allows you to select and record tracks according to the tape length. In the Time Edit function, once a length of time for recording is specified, then tracks are selected automatically for making a recording within that duration, changing the sequence of the tracks on the CD as little as possible. If there are certain tracks that you definitely want to be included, you can specify those tracks beforehand. (However, if a CD contains 21 or more tracks, none of the tracks from number 21 and above will be selected.)
This function is useful when you know the length of tape available for recording.

Since track 5 will not fit within the recording time on side A, the shorter track 6 is automatically selected in its place.



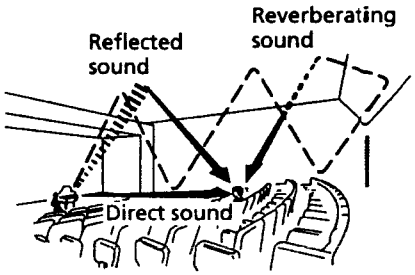
What is Just Edit?
This function is the opposite of Tape Select Edit, in that it edits the tracks to fit the length of tape that you have.
Once you specify the length of tape that you will be using, the sequence of tracks is changed to best fit that length of tape.

The tracks are selected to best fit the recording time of side A.

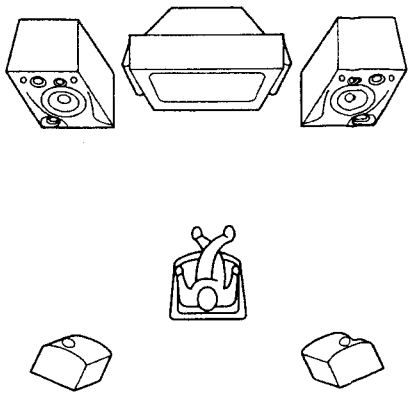


Sound Quality Adjustment

What is the Surround Effect?
This special effect creates a feeling of actually being at a concert hall or theatre by adding the reverberation of sounds reflecting off of the walls of a hall to the sound component travelling directly from the instrument, etc., to the listener.



Example of Surround Speaker Arrangement
It is best if the surround speakers (the rear speakers) are at the same level as the listener's ears or higher.

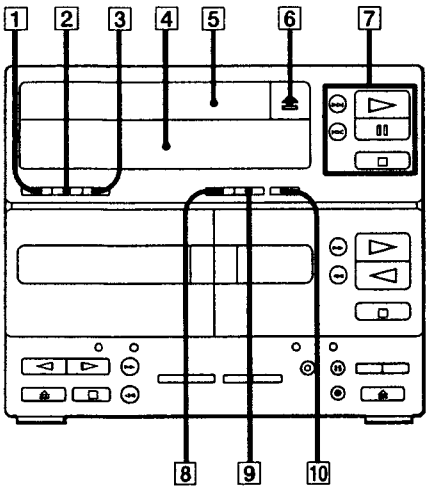


Index to Parts and Controls

Refer to the pages indicated in parentheses for details on how to use the controls. Controls with an asterisk have indicators on themselves.

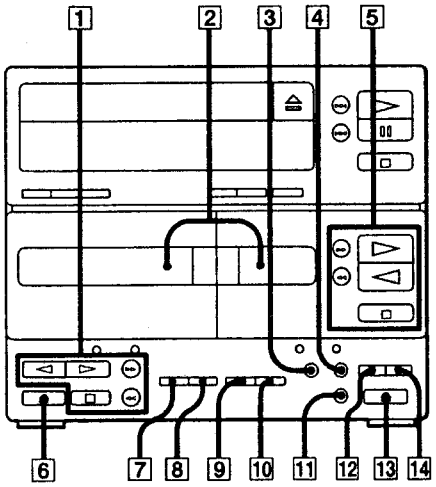
Front Panel

CD player section



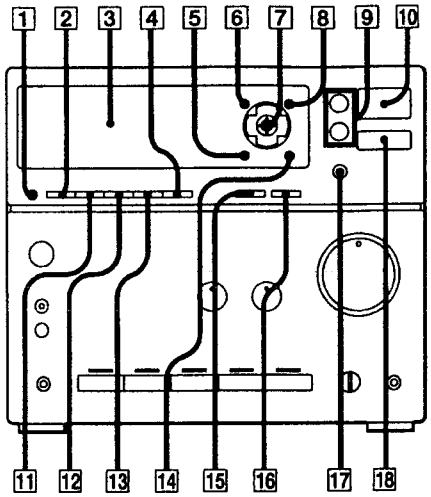
1 CONTINUE button (8)
2 SHUFFLE button (8)
3 PROGRAM button (9)
4 Display window (7, 15)
5 Disc tray (7)
6 ⏏ OPEN/CLOSE (open/close of the disc tray) (7)
7 CD player operating buttons
⏮◀◀/▶▶⏭ (manual search/AMS) (7)
▷ * (play) (7)
❚❚ * (pause) (7)
■ * (stop) (7)
8 EDIT button (15)
9 CHECK button (9)
10 DISPLAY button (13)

Tape player section



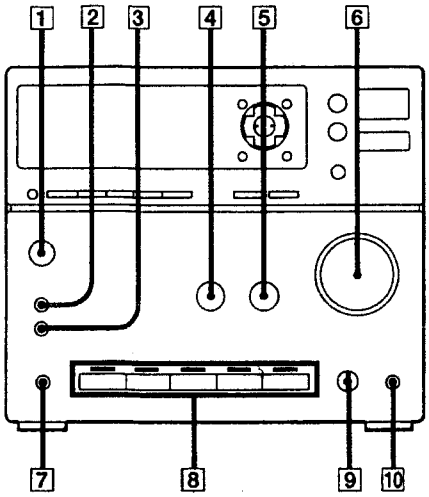
1 Tape operating buttons (for deck A)
▷ * (front side play) (12)
◁ * (reverse side play) (12)
■ (stop) (12)
▶▶ (fast rightward and AMS**) (12)
◀◀ (fast leftward and AMS**) (12)
2 Cassette compartments (12)
3 O REC MUTE button (14)
4 ❚❚ PAUSE button * (12)
5 Tape operating buttons (for deck B)
▷ * (front side play) (12)
◁ * (reverse side play) (12)
■ (stop) (12)
▶▶ (fast rightward and AMS**) (12)
◀◀ (fast leftward and AMS**) (12)
**AMS: Automatic Music Sensor (12)
6 ⏏ button (for deck A) (12)
7 COUNTER A/B button (13)
8 RESET button (13)
9 DIRECTION button (12)
10 DOLBY NR button (13)
11 ● REC button* (14)
12 DUBBING MODE button (18)
13 ⏏ button (for deck B) (12)
14 CD SYNCHRO button* (13, 15, 16)

Tuner/Equalizer section



1 CLOCK SET button (6)
2 TIMER SET button (22, 23)
3 Display window (6, 10, 20, 22)
4 SLEEP button* (22)
5 EFFECT button (13, 20)
6 MODE ON button (20)
7 CURSOR CONTROL (20)
8 MODE OFF button (20)
9 TUNER/TIMER (+/–) buttons (6, 10, 22)
10 TUNER/BAND button (10)
11 ONCE button* (22)
12 DAILY button* (22)
13 REC TIMER button* (23)
14 EQ MEMORY button (21)
15 STEREO/MONO button (10)
16 DISPLAY button (20)
17 MEMORY/NEXT button (6, 11, 22)
18 TUNING MODE button (10)

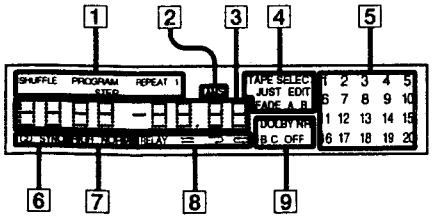
Amplifier section



1 SYSTEM POWER switch and ON/STANDBY indicator (6)
The indicator remains lit as long as the AC power cord is connected to a wall outlet.
2 KARAOKE PON button* (24)
3 Remote sensor
4 DBS FREQUENCY control (19)
5 DBS LEVEL control (19)
6 VOLUME control (5, 7, 19)
7 HEADPHONES jack (stereo minijack) (19, 25)
8 Function buttons* (18, 24)
VIDEO (25)
TAPE (18)
MD/DAT (25)
CD (14, 24)
TUNER (18)
9 MIC LEVEL control (24)
10 MIX MIC jack (minijack) (24, 25)

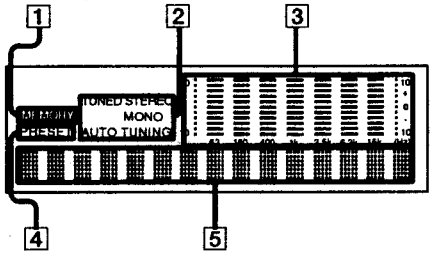
Display Window

HTC-H3900



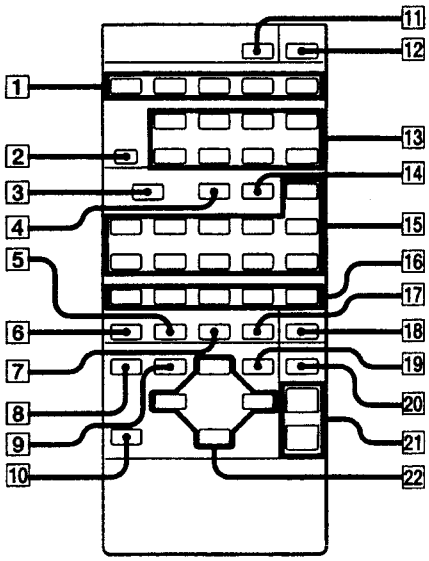
1 CD play mode indications (8)
2 AMS indication (7)
3 Counter indication (7, 15)
4 CD edit mode indications (15)
5 Music calendar (7, 15)
6 CD SYNC (synchro) indication (13)
7 Dubbing mode indications (18)
8 Direction mode indications (12)
9 DOLBY NR indications (13)

STR-H3900



1 MEMORY indication (11)
2 Tuner indication (10)
3 Equalizer/spectrum analyzer/surround indication (20)
4 PRESET indication (11)
5 Frequency/audio emphasis indication (10, 20)

Remote commander



1 MD recorder operating buttons (25)
2 TAPE DECK A/B selector (12)
3 TUNER/EQ/CD selector (8)
4 BAND button (10)
5 CLEAR button (8)
6 CHECK button (9)
7 REPEAT button (9)
8 EQ button (20)
9 SURROUND switch (20)
10 EFFECT button (20)
11 SLEEP button (22)
12 SYSTEM POWER switch (6)
13 Cassette deck operating buttons (12)
14 P.FILE button (21)
15 CD/Tuner numeric buttons (8, 11, 20)
16 CD player operating buttons (7)
17 TIME button (8)
18 FUNCTION button (24)
19 MODE OFF button (20)
20 MUTING button (19)
21 VOL +/– buttons (7, 19)
22 CURSOR CONTROL buttons (20)

Index

AMS 7, 12
Adjusting
  the audio emphasis 20
  the operating voltage 5
  the sound 19
Aerials 4
Auto play 12
CD player 7
Clock setting 6
Connecting
  an MD recorder or a DAT deck 24
  audio optional equipment 25
  a VCR 25
  optional equipment 24
  the aerials 4
  the flat cord 4
  the power 5
  the speakers 4
  the stereo 4
Display indications 31
Dolby
  NR (noise reduction) 13, 28
Dubbing 17
Glossary 28
Graphic equalizer 20
Inserting
  a blank space during recording 14
  the batteries 5
Just edit 15
Karaoke 24
Making a personal audio emphasis file 21
Maintenance 27
Microphone mixing 24
Music calendar 7
Normal play 7
One touch play 6, 7, 10, 13
Parts identification 30
Personal file 21
Playing
  a CD (normal play) 7
  a tape 12
  preset radio stations 11
  tracks in random order (shuffle play) 8
  only the desired tracks (delete play) 8
  tracks in desired order (programme play) 9
  tracks repeatedly (repeat play) 9
Precautions 26
Programme edit 16
Programme play 9
Radio stations
  presetting 10
  tuning in 10
Recording
  a CD 13, 14, 15, 16
  a CD automatically 13
  a CD manually 14
  a radio programme 17
  another tape (dubbing) 17
  timer recording 23
  from a microphone (mixing) 24

continue to next page →

→ continued

Recording CDs
selecting tape length automatically (tape select edit) 14
specifying tape length (time edit/just edit) 15
specifying track order (programme edit) 16
Reducing the vocals 24
Relay play 12
Remote commander 6, 8, 16, 19
Repeat play 9
Restoring the factory settings 27
Saving a recording 26
Shuffle play 8
Simple operation 6
Sound adjusting 19
Speakers 4
Specifications 28
Supplied accessories 28
Synchronized CD recording 13, 15, 16
Tape player 12
Tape select edit 14
Time edit 15
Timer
falling asleep to music 22
timer recording 23
waking up to music 22
Troubleshooting guide 26
Tuner 10